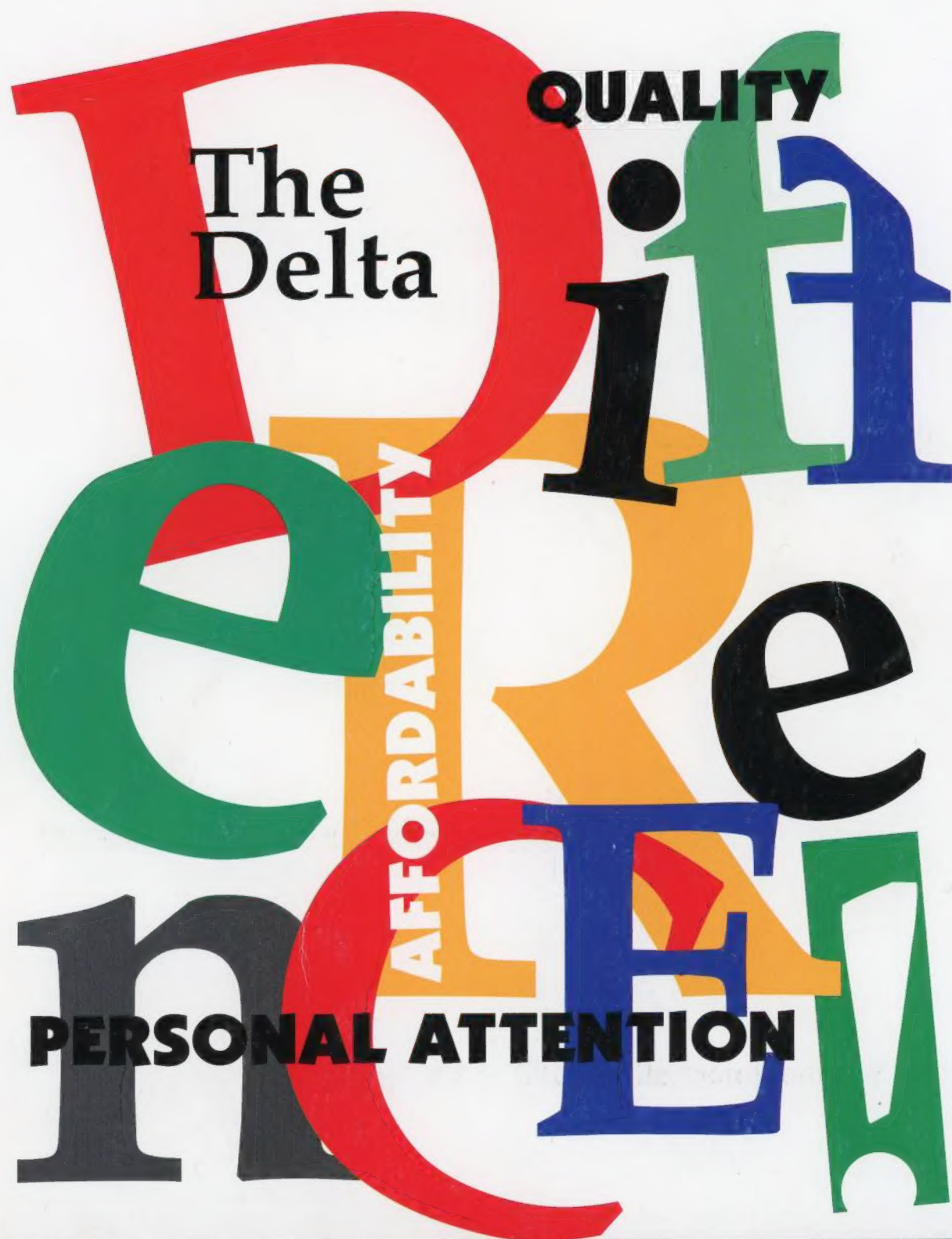


DELTA COLLEGE CATALOG 1998-1999



EXPERIENCE THE DELTA COLLEGE DIFFERENCE



Mailing Address:

1961 Delta Road
University Center, Michigan 48710

Telephones:

(517) 686-9000 (Switchboard)
(517) 495-4000 (from Midland)
(517) 758-3400 (from Frankenmuth, Reese,
Birch Run & Vassar)

(517) 686-9555 (24 hour information line)

(517) 686-0573 (Telecommunication device
for the deaf/TDD)

FAX:

(517) 686-8736

Contact us on the Internet:

<http://www.delta.edu>

24 Hour Weather Information: (517) 686-9179

Delta College personnel made every reasonable effort to determine that everything stated in this catalog was accurate at the time it was printed. Courses and programs offered, tuition and fees, services, and the academic calendar, together with other matters contained herein, are subject to change without notice by Delta College for reasons related to student enrollment, level of financial support, or for any other reason, at the discretion of the College. Delta College further reserves the right to add, amend, or repeal any of their rules, guidelines, policies and procedures. Although the provisions of this catalog are not to be regarded as a legal contract, students enrolled at Delta College are responsible for all regulations in this catalog as well as additions or changes to regulations as they are posted or printed in other College publications.

WELCOME TO DELTA COLLEGE

1. Table of Contents
2. Welcome from Our President
3. Accreditation and Memberships
4. Introducing Delta College
5. Profile of Our Students



Delta College
We Are Your Opportunity

Table of Contents

It was our aim, as we prepared this catalog, to provide you with a tool that will be of help to you throughout the time you spend with us at Delta College pursuing your educational goals. We hope you will find it useful, whether you are a new student, a returning student, or a member of the community involved in our various outreach activities. The Table of Contents below tells you what is covered in each section of this catalog. If you are looking for a specific topic, check the Index on page 217, where you should find that topic listed, along with the page on which you will find the information. If you come across a term you don't understand, check page 215 for Definitions of College Terms. If you can't find information important to you or you find something confusing, stop in at the Welcome Center and talk with the staff. They will be able to clarify for you or direct you to the appropriate staff person for an answer, and they will pass on to us anything you think should be added to or changed in this catalog.

WELCOME TO DELTA COLLEGE and Happy Reading!

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the Delta Difference

Michelle Thompson

Hometown
Saginaw

Major
Elementary Education

Favorite Musical Group
Tony Tone Toni

Last Book Read
The Scarlet Letter

Age
30

High School
Buena Vista High School

Favorite Food
Pizza

Most Admired Figure
My Mother and Father

Hobbies
Working on my computer;
studying the Bible
and doing research

Career Goals
I want to be a teacher so
I can inspire students
to be all they can be.

Why did I decide on Delta?

I decided on Delta because I heard it was a great college for first time students. It has smaller classes, lower tuition, and positive people in a very positive environment.

What do I think is the Delta Difference?

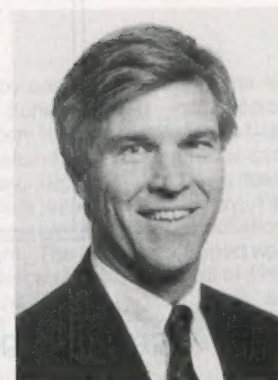
I think the Delta Difference is all the great services that Delta has to offer, such as extra counseling and student employment opportunities, on and off campus. The personal attention a student receives here is so wonderful.



Delta College
We Are Your Opportunity

We are accepting applications.
Call Admissions now.
Get it right at Delta College.
Phones: 686-9093, or from Midland 495-4000, ext. 9093

Welcome



As **your** community college, we bring you a variety of opportunities to make it as easy as possible to pursue your educational, training, retraining, and personal growth needs...

- Academic occupational programs that prepare you for the world of work
- Academic courses that are easily transferable to other colleges and universities
- Leisure and personal interest classes and workshops to enrich your life
- Programs and services offered for business and industry through our Corporate Services Division

Delta College has the lowest tuition in the region, small classes taught by dedicated faculty, and a wide variety of services offered by a staff who will make every attempt to meet your individual needs. There are many interesting, highly motivated people just like you attending Delta College. They come from diverse backgrounds, representing many ages, circumstances, and ethnic ancestries. They come for the expectation of discovery, the hope for achievement, and the desire to add new dimensions to their lives.

The rewards of a quality education are numerous. Look around you. Thousands of Delta graduates, people just like you, are the teachers, the health professionals, the business owners, and the leaders of our community. Accept my challenge to you to use your time and effort here wisely, because the quality education you receive at Delta College is your investment in your future.

On behalf of our Board of Trustees, students, faculty, staff and administration, I welcome you to Delta College.

A handwritten signature in dark ink, appearing to read "Peter D. Boyse".

Peter D. Boyse, Ph.D.
President

Accreditation and Memberships

**Accredited Continuously by:
North Central Association
of
Colleges and Schools**

Approved by the Michigan Department of Education

Accrediting/Approving Agencies

American Dental Association Commission on Dental Accreditation

- Dental Assisting
- Dental Hygiene

American Physical Therapy Association Commission on Accreditation in Physical Therapist Education

- Physical Therapist Assistant

Commission on Accreditation of Allied Health Education Programs

- Respiratory Therapy
- Surgical Technology

Joint Review Committee on Education in Radiologic Technology

- Radiography

Michigan Board of Nursing

- Practical Nursing
- Registered Nursing

Michigan Department of Consumer & Industry Services

- Nursing Assistant

Michigan Department of Natural Resources/Operator Training

- Water/Wastewater Treatment Technology

Michigan Department of Public Health/Water Division

- Water/Wastewater Treatment Technology

National Automotive Technicians Education Foundation

- Automotive Service Technician

National League for Nursing

- Registered Nursing

Technology Accreditation Commission of the Accreditation Board for Engineering (TAC/ABET)

- Electronic Engineering Technology
- Mechanical Engineering Technology

College Memberships

American Association of Collegiate Registrars and Admissions Officers (AACRAO)

American Association of Community Colleges

American Association of Community Colleges International/Inter-cultural Consortium

American Council on Education

American Management Association

Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO)

Michigan Association of Community Colleges Instructional Administrators (CIA)

Michigan Community College Association

Michigan Community College Community Service Association

Michigan Community Colleges for Global Education (MCCGE)

Michigan International Development Education Outreach Network (MIDEON)

Michigan League for Nursing

Michigan Liberal Arts Network for Development

Michigan Occupational Deans' Administrative Council

National Association of College and University Business Officers

National Council for Occupational Education (NCOE)

National League for Innovation in the Community College

National League for Nursing

National Association of Student Aid Administrators

Students wishing to review documents pertaining to accreditation should contact the Dean of Student and Educational Services.

Affirmative Action Statement

Delta College is committed to providing equal opportunity through its employment practices, educational programs, and through the many services it provides to the community. The College will make all personnel decisions, offer programs that will foster educational opportunities, and maintain a program of services designed to serve the community, without regard to, but not be limited to race, color, religion, sex, marital status, age, national origin, or handicap. Furthermore, the College will undertake an affirmative program of action to expand equality of opportunity in employment. The College will develop and maintain educational programs and services that are sensitive to the emerging needs of members of minority groups, women, and the handicapped. And finally, the College will initiate programs that will increase, on the part of all personnel, a sensitivity to the interests and needs of those who have historically been discriminated against. (Board of Trustees 4/83)

Inquiries regarding the Delta College non-discrimination policy may be directed to the Delta College Affirmative Action Officer located in Office A-2, lower level of the main building, or phone 686-9547. If you wish to contact the Office of Civil Rights directly, mail inquiries to the Office of Civil Rights, Region Five, Pl. Bldg., Room 222, 55 Erie View Plaza, Cleveland, Ohio 44114, or phone (216) 293-4970.

Introducing Delta College

Delta College Begins

Delta College has continued, without interruption, the educational opportunities that were previously provided by Bay City Junior College. In the mid-1950's, as the demand for education beyond high school increased in the tri-county area, the percentage of students attending Bay City Junior College from outside the K-12 Bay City Public School District steadily increased. The enrollment was approximately 50 percent non-resident, with about 40 percent of the enrollment coming from Saginaw. Early in 1955, seven community leaders from Bay, Midland and Saginaw met to discuss the possibility of a tri-county college. Their interest and action prompted the following developments:

1955: Organization of the Tri-County Committee of 300 formed to study the needs of higher education in the Saginaw Valley area.

1956: The final report of the Committee of 300, outlining the need to establish and finance a new college, was received.

1957: Legislation was submitted to the State of Michigan Legislature to finance and establish a new institution of higher education.

1957: Voters of Bay, Saginaw, and Midland counties formed a community college district under Act 182 of the Public Acts of 1957 and authorized a levy of 1.5 mills to construct and operate a college.

1958: Bonds were sold to provide the financial structure for Delta College and campus construction began.

1959-61: Members of the faculty and staff of Bay City Junior College assisted in planning for the new college. Many of the Bay City Junior College faculty, students, and staff became part of the new college as Bay City Junior College operations were assimilated into Delta College.

1961: Delta College opened.

Campus Site

The College is located on a 640-acre campus complex in Bay County. Noted for its beautifully-landscaped center garden, the College has miles of nature trails, an outdoor classroom, running and fitness trails, tennis courts, and archery and golf areas, as well as a covered bridge. The natural surroundings of Delta College positively enhance the learning process of students. The Delta College site, at University Center, Michigan in Bay County, lies almost midway between the counties' major cities of Saginaw (69,512), Bay City (38,936), and Midland (37,819). This triangle forms the heart of the Saginaw Valley area which is drained by the Saginaw River and its tributaries, northward to the Saginaw Bay and Lake Huron. Bay County adjoins the Saginaw Bay, an important recreational area and waterway whose ports are part of the St. Lawrence Seaway system.

Tri-County District

The tri-county area is one of the major concentrations of population within the state. The 1990 population census reports an area population of approximately 399,320. Sixty-three percent of the people are classified as urban residents, with 44 percent residing within city limits.

The high percentage of urban population can largely be explained by the concentration of industry within the area. Over 95 percent of the employed work force are in occupations other than agriculture. Each county has a major concentration of industry. The Dow Chemical Company and Dow Corning Corporation have large plants and international corporate headquarters in Midland. Bay City's employment centers around Chevrolet Motors. Saginaw, the largest industrial center, has a number of General Motors industries and has the largest foundry concentration in the country.

The tri-county area is also well known for its agricultural products. Sugar beets, beans, and potatoes are grown extensively throughout the Valley. On a national basis, Saginaw and Bay County rank number one and two in sugar production and one and five in bean growing, respectively. Beans are shipped from the area to foreign ports.

Accreditation

Delta College is accredited by and is a member of the North Central Association of Colleges and Schools (NCA). Initial accreditation was granted the College in October, 1962 by the Michigan Commission on College Accreditation. A status study to prepare for candidacy was submitted to the NCA in May, 1964, as a first step toward regional accreditation. College officials were notified in July, 1966, that the College had been accepted as a candidate for accreditation based on a report of a NCA visitation team. The Self-Study Report was completed in May, 1967, and accreditation was granted in April of 1968. NCA has subsequently reaccredited the College in 1973, 1984, and again in 1993. Several occupational academic programs also have received additional accreditation status from their corresponding professional boards, councils, or regulatory groups.

National League for Innovation

Delta College is a charter member of the National League for Innovation in the Community College. The League is comprised of 20 college districts with 56 campuses, enrolling more than 600,000 students. Delta's membership is significant recognition that it is devoted to the improvement of learning through experimentation and innovation. The League places a strong emphasis on research, evaluation, and dissemination of information on innovations. In this way, potentially valuable new approaches to instruction are made known and an opportunity is provided to judge their suitability for use at other colleges. Participation in League activities enables Delta to adapt and adopt those innovative practices which have proved effective elsewhere, while sharing the results of its own innovations with colleges in other districts. This means that residents of all ages in the tri-counties have the opportunity to share in the benefits of improved instruction and services provided by the College.



MISSION STATEMENT

Our mission is to be an innovative and responsive community college dedicated to meeting the diverse educational and personal growth needs of our students by providing excellent learning opportunities and support services.

* * * *

The College Mission reflects our Values.

VALUES STATEMENT

At Delta College, we value our students, our employees, and our constituents. As we hold the institution in trust for them, we aspire to these ideals:

The Learning Experience and the Pursuit of Knowledge: Our students and our personal and intellectual growth depend upon the pursuit of knowledge and an appreciation for life-long learning.

Academic Excellence: Our dedication to academic excellence encourages and supports the quest to maintain high academic standards.

Access: Our commitment to an open-door policy ensures that our constituents may exercise their legitimate right to access College services.

Professional Integrity and Collegiality: Our ethics and our respect for others guide our relationships, professional activities, and the performance of our duties to the best of our ability.

Academic Freedom: Our dedication to the free exchange of ideas and information promotes our growth as an educational institution.

Quality: Our commitment to quality programs and services ensures our response to a dynamic environment through self-evaluation and innovation.

Diversity: Our College reflects the needs of our diverse College community.

Shared Governance: Our trust in shared governance compels us and our students to contribute to the evolution of College policies and operating procedures.

Community Leadership and Service: Our local and global participation and leadership exemplify dedication to our mission.

Environmental Safety: Our obligation to clean, comfortable, safe, efficient, and current facilities aids in the fulfillment of the Delta College mission.

OUR VISION FOR DELTA COLLEGE

Delta College is a learning centered institution that focuses on the diverse post-secondary learning needs of the community. The College provides quality learning opportunities and recognizes learning can take place 24 hours a day, every day, in and out of the classroom, and on and off campus. Learning is our primary measure of success.

In reaching our vision we will:

Provide diverse learning experiences which give our students an advantage in the workplace, at baccalaureate institutions, and in access to global opportunities.

Expand our impact by providing learning opportunities for new and diverse groups of constituents.

Become a focal point for learning and cooperative development in the Tri-Counties.

Increase access to learning opportunities beyond our conventional boundaries of location and time.

Develop our physical facilities and our technological capacity in order to promote learning by students and staff.

Be creative in the acquisition and use of resources to facilitate learning.

Develop a faculty and staff that are committed to respecting our students' diversity of culture and educational backgrounds, and equally committed to providing diverse learning opportunities to address students' unique needs.

Be active in identifying and addressing our communities' educational needs, and be active across the College in promoting our capacities, services, and opportunities.

Improve student success by assessing educational experiences for our students and continually work to make these experiences better.



GUIDING PRINCIPLES

The implementation of our College Mission and its underlying Values are supported by certain Guiding Principles.

Based on our Mission and Values Statements, Delta College is committed to:

...providing a range of programs, opportunities, and experiences that enrich the lives of the residents of our community.

...continuously improving and regularly measuring the quality of all of our programs and services.

...accepting the challenge of our open door policy by providing programs and services appropriate to our students' needs and backgrounds.

...providing services to help students overcome obstacles that impede the achievement of their educational goals.

...working with K-12 districts, other colleges and universities, and business and industry to share and respond to each others' needs.

...creating an environment that fosters appreciation and respect for the uniqueness of each individual.

...expanding our students' cultural and global awareness.

...the free exchange of all ideas for their own sake as well as for their potentially practical applications.

...providing a work environment which supports the professional development of all College employees.

...shared governance, understanding that we are all members of the same College community with the privilege of ownership and the obligation of participation.

...employee involvement in the community.

Profile of Our Students

When Delta College opened its doors in September, 1961, there were 1,700 students, whereas in the Fall Semester of 1997, approximately 10,415 academic and skilled trades students plus 1,000 community education students were enrolled in courses and programs on the Campus and throughout 30 neighborhood centers. Who are these students and why do they enroll at Delta? Actually, there is no Delta College student stereotype. Students differ considerably in their ethnic, social, and economic backgrounds and their educational goals. Most students (about 85.3%) reside in the tri-county district and more students are enrolled on a part-time basis than those attending full-time because most students are also working full or part-time. Some are rich, some are poor, most are neither, but approximately two-thirds (67%) of students enrolled for six or more academic credits receive some form of financial aid. Some have precise career plans while others want to explore before they decide; some are taking classes for personal enrichment reasons. What most have in common, though, is that they are seeking to learn and improve their lives. Over the years, students have been asked about their reasons for choosing and attending Delta and the five major reasons given have been: location of Delta (close to home and/or work); curriculum or programs offered; low costs; course work relevant to goals; quality of instruction. The diversity of students at Delta College is illustrated below.*

Class Designation

Freshmen	61.7%
Sophomores	38.3%

Student Age Distribution

19 years old and under	29.2%
20-24	30.8%
25-29	13.3%
30-44	21.0%
45 and over	5.7%

Gender

Females	57.6%
Males	42.4%

Geographic Residences

Saginaw County	42.7%
Bay County	29.0%
Midland County	13.6%
Other Michigan Counties	14.4%
Out of State	0.3%

Ethnic Backgrounds

Caucasian	84.3%
African-American	7.4%
Hispanic	4.0%
Not designated	2.6%
Asian	0.7%
Native American	0.6%
International	0.4%

Declared Program Choices

Occupational Programs	40.4%
Transfer Programs	31.4%
Deciding	21.7%
Personal Enrichment	3.1%
Guests & Dual Enrolled	3.4%

Attendance Distribution

Day hours only	52.9%
Day and evening combination	34.0%
Evening hours only	12.7%
Weekends only	0.4%

*Figures based on Fall Semester 1997 (pertains only to students enrolled in academic courses).



THE ENROLLMENT PROCESS

1. Academic Calendar
2. Admission and Pre-Enrollment Information
3. Financial Aid
4. Veterans/Reservists Information
5. Steps to Success Process
6. Registration



Academic Calendar 1998-99

Activity	Spring '98 Semester 15 Weeks	Spring '98 Session 7-1/2 Weeks	Summer '98 Session 7-1/2 Weeks	Fall '98 Semester 15 Weeks	Winter '99 Semester 15 Weeks	Spring '99 Semester 15 Weeks	Spring '99 Session 7-1/2 Weeks	Summer '99 Session 7-1/2 Weeks
Applications Available for Financial Aid	Jan. '97	Jan. '97	Jan. '97	Jan. '98	Jan. '98	Jan. '98	Jan. '98	Jan. '98
Admission	----- Continuous -----							
District Status Change	----- One Week Before Your Registration -----							
Last Day Readmission for Phone Registration	March 1	March 1	March 1	March 22	Oct. 25	March 1	March 1	March 1
Schedule of Academic Classes Available	Early March	Early March	Early March	Early March	Early November	Early March	Early March	Early March
Phone Registration Begins ¹	Early March	Early March	Early March	Early April	Early November	Early March	Early March	Early March
Weekend Classes Begin	May 9	May 9	July 11	Aug. 29	Jan. 9	May 8	May 8	July 3
First Day of Semester/Session²	May 6	May 6	June 29	Aug. 29	Jan. 6	May 5	May 5	June 28
Last Day Add Without Instructor Signature ²	May 12	May 8	July 1	Sept. 4	Jan. 12	May 11	May 7	June 30
Last Day of Offset ²	----- 25th CALENDAR DAY FROM START DATE -----							
Last Day for 100% Refund ²	----- SEE COURSE SCHEDULE -----							
Last Day for 50% Refund ²	----- SEE COURSE SCHEDULE -----							
Last Day to Audit ^{2,3}	----- LAST DAY OF 50% REFUND PERIOD -----							
Last Day Drop With No Grade ^{2,3}	----- LAST DAY OF 50% REFUND PERIOD -----							
Last Day to Withdraw With "W" ^{2,3}	June 26	May 31	July 25	Oct. 23	Feb. 26	June 25	June 1	July 23
Last Day to Apply for Graduation	June 26	June 26	June 26	Oct. 23	Feb. 26	June 25	June 25	June 25
Last Day to Apply for Graduation (\$25 Late Fee)	July 30	July 30	July 30	Nov. 24	April 6	July 29	July 29	July 29
Last Day to Apply for Pass/No Credit ^{1,2,3}	July 30	June 17	Aug. 7	Nov. 24	April 6	July 29	June 16	Aug. 9
Last Day to Withdraw With "WE" or "WP" ^{2,3}	July 30	June 17	Aug. 7	Nov. 24	April 6	July 29	June 16	Aug. 9
Incomplete Deadline for Required Coursework ³	Dec. 1	Dec. 1	Dec. 1	Apr. 1	Dec. 1	Dec. 1	Dec. 1	Dec. 1
Health Validation Applications Accepted ¹	June 26-Aug. 20	June 26-Aug. 20	June 26-Aug. 20	Oct. 23-Dec. 21	Feb. 26-April 27	June 25-Aug. 19	June 25-Aug. 19	June 25-Aug. 19
Holidays: No Classes	May 25 July 3-5	May 25	July 3-5	Sept. 5-8 Nov. 25-29	Mar. 1-6 Apr. 4	May 31 July 4-5	May 31	July 4-5
Last Day of Semester/Session²	Aug. 20	June 26	Aug. 19	Dec. 20	Apr. 27	Aug. 19	June 25	Aug. 18

NOTATIONS

¹Dates subject to change. Complete registration information, including Special Phone Registration dates for Health and Nursing First Clinical Courses, is listed in each semester's Academic Classes Schedule booklet. See Section III, Programs of Study, Health Program Procedures, page 33.

²Some courses begin and end other than these dates; see each semester's Schedule of Academic Classes booklet. Deadline dates apply only to regular semester/session classes; check with the Records & Registration Office for deadlines for these courses.

³For grading policies, see Section IV, Academic Policies and Information, Grading System, pages 88-89.

Community Services Classes: Registration dates, times and procedures are different from above; consult your Community Services Schedule of Classes published each semester.

Admission and Pre-Enrollment Information

Admission Criteria

Delta College has an "open-door" policy which allows admission of persons from varying ages, backgrounds, interests, and abilities. You are not required to have a minimum grade point average or a certain test score to be granted general admission to the College. Your general admission, however, does not guarantee entry into all academic programs within the College. Academic programs of study that require specific prerequisites or eligibility requirements are outlined in Section III of this catalog.

If you are included in any **one** of the following categories, you are encouraged to apply for admission:

1. High school graduates.
2. Persons who have passed a high school equivalency exam (G.E.D.).
*Non-high school graduates are encouraged to take the G.E.D. exam; however, G.E.D. results are not required for general admission.
- *3. Adults 18 years of age or older who have not attended high school for at least six months since the time their high school class would have graduated.
4. Currently enrolled high school students who have permission from their parents and high school counselor or principal.
5. Approved and authorized persons from other countries entering the U.S. for educational purposes under a student visa.

***Note:** If you do not have a high school diploma or have not successfully completed the G.E.D., you may be restricted from receiving federal financial aid if "ability to benefit" criteria are not met. We encourage you to contact the Admissions Office, the Office of Financial Aid, or the Assessment/Testing Services Office for detailed information concerning "ability to benefit" criteria.

Admission Dates

Although Admission Applications are accepted and processed up through the first week of classes each semester, we encourage you to submit your Application at least 30 days prior to your enrollment period and preferably as early as 6 to 8 months. **If you plan to request financial aid, it is essential for you to apply for admission and for financial aid 8 to 10 weeks prior to registration.**

Our traditional starting dates are:

- Fall Semester (late August)
- Winter Semester (early January)
- Spring Session (early May)
- Summer Session (late June)

Admission Procedures

Application fee: \$10

Completed Admission applications may be returned to the Admissions Office/Welcome Center via the mail or in person. Please review the following admission categories and follow the procedures outlined.

1. **High School Seniors:** If you plan to enroll the summer or fall after your June graduation, you need to complete an Admissions Application and give it to your high school counselor or principal. Ask your high school to send your Application, along with your current transcript, to the Admissions Office. Be sure to request that a **final transcript** be sent upon your graduation.
2. **Dual Enrolled Students:** If you plan to enroll in Delta courses and in high school courses during the same semester, you need to submit a special Dual Enrollment Application. This Application, available at your high school, needs to be signed by your parent and high school counselor or principal. Request that your high school send a current copy of your transcript to the Admissions Office.

3. **Adults Out of High School:** Complete an Admissions Application and return it to the Admissions Office. You need to request each previously attended high school, education center, and/or college to send a copy of your official transcript to the Admissions Office.
4. **Transfer Students:** Complete an Admissions Application and request each college/university attended to send your official transcript to the Admissions Office. If you have allowed adequate time, a credit evaluation will be completed prior to registration. A maximum of 38 credits may be applicable toward a Delta Associate degree. **If your official transcripts are received prior to the last day of telephone registration, you may register by phone.**
5. **Guest Students:** If you are attending another college and wish to take Delta courses on a Guest status, you should complete Part I of the Michigan Uniform Undergraduate Guest Application (available at your current institution or from Delta). Ask the Registrar at your current college to complete Part II and to forward it to Delta's Admissions Office. Be sure to check with your current institution to determine if your Delta courses will satisfy requirements.
6. **Readmitted Students:** If you are a former Delta student who has not taken a course since Winter 1984, you need to be readmitted. Readmission may be accomplished by telephoning the Admissions Office or by completing an Admissions Application, available from the Admissions Office.
7. **International Students:** If you are not a U.S. citizen or a permanent resident and you are requesting an I-20 form, you need to complete the International Admissions Application.

Transcripts

If you are a new student in any category except Guest, or if you are a returning student who has attended another college or university since Delta, you need to request immediately that your official transcript be sent to:

Delta College
1961 Delta Road
Admissions Office
University Center, MI 48710

Official transcripts include: high school, college, university, G.E.D., and adult education course work.

After You Apply

After you apply you will receive a prompt response to your mailed Admission Application. Applications submitted in person will be processed immediately. Upon acceptance, you will be issued a student number, and further information about assessment, advisement, and/or registration procedures. After being accepted, most new and some returning students are required to participate in pre-enrollment procedures such as assessment, orientation, and advisement. Please see page 17 for further information.

Admissions Advising/Campus Tours

We invite you to call with any questions you may have and especially invite you to make an appointment with an Admissions Representative. We'll discuss pre-enrollment procedures, the financial aid process, and general college information. The Admissions Office phone number is: (517) 686-9093 or from Midland/Auburn, phone 495-4000, ext. 9093.

International Student Admission

Delta College is authorized under federal law to admit and enroll non-immigrant alien students. In order to obtain a visa for entry into the United States on an F-1 student visa status, you must present to the U.S. Consul abroad a valid passport, proof of sufficient finances, and a completed I-20 form.

An I-20 form (Certificate of Eligibility) is issued to admitted Delta students after the College has determined that you have met the following conditions:

1. **Academic Requirements:** You must be 18 years of age or older and have successfully completed a course of study equivalent to high school level. The equivalent of a "B" grade point average is required in all courses; i.e., 14 out of 20, 70% out of 100%. You are required to submit certified copies of your high school leaving certificate, national and international exams, and transcripts which reflect courses and marks earned during the last three years of high school.
2. **Language Proficiency:** If you are from a country where English is not the official native language, you must be proficient in English to pursue your studies or you must make arrangements to enroll in an English Language Center prior to acceptance. English proficiency means that you speak, write, and read English fluently. Such fluency is necessary to insure your enrollment, proper placement, and success in achieving your educational goals.

You must furnish Delta College with proof of having received a minimum score of 500 on the TOEFL (Test of English as a Foreign Language) or official transcripts documenting successful completion of an advanced course in English from a licensed English Language Center. An additional test and interview may be required to establish English proficiency before enrollment. Further information about TOEFL can be obtained by writing to: TOEFL, P.O. Box 6151, Princeton, NJ 98541. **International Transfer Students** who are enrolled in a U.S. college may submit proof of successful completion of a transferable English language course with a minimum of "B" average or better.

3. **Financial Verification:** You are required to submit an up-to-date financial support statement from a sponsor and their bank, which testifies to the sponsor's willingness and capability to support you while you are at Delta. If you are not sponsored by your government or an organization, you must submit a bank statement which testifies to the existence of enough funds in your family's account to provide for attendance. All College tuition is due and payable in full at the time of registration. **Loans, scholarships, financial aid, and deferred payments are not available for international students.**
4. **Health Statement:** You are required to submit a health form, which states your physical and mental condition. All international students are required to have health insurance coverage during their enrollment at Delta College.
5. **Deadlines:** All documents, such as applications, recommendations, official transcripts, financial statements of support, certificates of English proficiency, and medical reports, must be in the Admissions Office at least **four months** preceding the semester you desire to be admitted.

Semester	Application Deadline	Semester Begins
Fall	May	Last week of August
Winter	September	First week of January
Spring	January	Beginning of May

Important Notes:

- Applications for admission to Delta College will be mailed upon written request. High school records submitted by friends or relatives on your behalf are not accepted. These records must be mailed directly to Delta College by your secondary school, college, or the Ministry of Education in your country.
- All documents must be original or certified copies and must be accompanied by official English translations. Transcripts must be signed by the principal or registrar of each school or college and impressed with a seal or stamp of the school attended. You must not leave your country, language center, or college before you receive official acceptance from Delta College.



"Student's Quote"

*Molly Dickston, Major, Communications
Nouvel Catholic Central High School*

"I really like the faculty, they are really concerned about the student as an individual, not as a number. They have a general interest in the student themselves, beyond the school academics."

Costs*

Delta offers quality education at the most reasonable cost in the tri-county area.

* Note: Costs are for the 1998-99 academic year.

Tuition

In-District	\$57.25 per credit
Out-District	\$77 per credit
Out-Of-State/International	\$110 per credit

Course Fees \$3.50-\$75 per course

Registration Fee	\$21 per semester
Multi-Registration Fee	\$25 per non-payment
Late Registration Fee	\$10 per credit
Admission Application Fee	\$10
Orientation Fee	\$ 0
Assessment Fee	\$ 0
Transcript Fee - Three to Five Days	\$ 0
Transcript Fee - Same Day	\$10
Library Fee	\$ 0
Tutoring Fee	\$ 0
Parking Fee (except violations)	\$ 0
Student Activities Fee	\$ 0
Graduation Fee	\$ 0
Late Graduation Fee	\$25
Diploma Fee	\$ 0

Other Costs: In addition to tuition and fees, you must be prepared for the other costs incurred when attending college. These include books, supplies, transportation, room and board, miscellaneous personal expenses, child care, and any costs associated with disabilities.

Residency Policy and Guidelines

Educational costs at Delta College are shared by students, the taxpayers in the Delta College District, and the State of Michigan. Property taxes paid by residents of the Delta College District supplement student tuition and state aid for in-district status students; therefore, the tuition charged legal residents of the Delta College district is the lowest and students who are classified as out-of-state residents are charged the highest tuition. A student's residency classification is established when admitted to Delta College and may only be changed as detailed under No. 4 below.

1. **Residency Classifications:** A person will pay course tuition according to one of the following classifications of legal residence:

- In-District Status:** Legal resident* of Bay, Midland, or Saginaw counties. (This is the Delta College District)
- Out-of-District Status:** Legal resident* of Michigan but not of the above three counties.
- Out-of-State Status:** International students and all others not classified within a or b above.

*A legal resident is one whose permanent, primary residence is where he or she intends to return whenever absent from college. A dormitory or apartment rented only for the period of time during college enrollment is not a permanent primary residence.

2. **In-District Criteria:** For tuition purposes, an in-district student is an American citizen or permanent resident **who can provide legal proof** of residence within Bay, Midland, or Saginaw counties **for at least six consecutive months** immediately preceding the first day of the semester in which the person plans to enroll.

3. In-District students whose families/spouses move out of the Delta College District during the time they are enrolled may retain their residency status as long as they are continuously enrolled in successive fall and winter semesters.

4. **Proof of In-District Residence:** All students are subject to a check of their residency status at admission and registration. Students furnishing false information will be subject to disciplinary action. The following examples are types of documents which are considered in determining proof of in-district legal residency:

- A current/valid Michigan driver's license, Michigan Secretary of State I.D. card, or valid Michigan motor vehicle registration in the student's name indicating a permanent address within Bay, Midland, or Saginaw counties.
- A property tax receipt from Bay, Midland, or Saginaw counties.
- A current voter registration card indicating an in-district address.
- Other legal documents such as court-issued guardianship papers.

5. **Change of Residency Status:** While attending Delta College, students may petition the Director of Admissions to change their residency classification. Petition forms are available in the Admissions or Records and Registration Offices and must be submitted, with proof of in-district residence (see No. 3 above), at least one week prior to the student's registration date. Students must meet the criteria stated in No. 2. Any adjustments made in tuition due to a change in residency status shall not be retroactive.

Note: Guest students from other colleges and international students on a student, working, or visitor visa should not expect to have their residency status changed while attending Delta College, as the definition of legal resident in No. 1 above has not been met.

If you have questions regarding residency, please contact the Admissions Office at (517) 686-9093; from Midland/Auburn, 495-4000, ext. 9093.

Financial Aid Programs

PROGRAMS	WHO IS ELIGIBLE					HOW MUCH	HOW TO APPLY	
FEDERAL PROGRAMS	A	B	C	D	E		F	
FEDERAL PELL GRANT	✓	✓	✓		✓	Awards range from \$400-\$3,000.	✓	
FEDERAL WORK-STUDY	✓	✓	✓		✓	Awards range from \$500-\$1,750 per semester. The student earns these funds through part-time employment and receives a paycheck every two weeks.	✓	
FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT	✓	✓	✓		✓		✓	
FEDERAL STAFFORD LOAN (a) Subsidized (b) Unsubsidized (you pay interest while in school)	✓	✓	✓		✓	a) Cost minus Family Contribution minus Other Aid = Need. b) Cost minus Other Aid (including subsidized loan) = Need.	✓	Obtain Stafford Loan application from local bank or credit union.
FEDERAL PARENT LOAN (PLUS)	✓	✓	✓		✓	Parents of dependent students. Cost minus Financial Aid = Need.	✓	Obtain PLUS Loan application from local bank or credit union.
VETERANS BENEFITS	✓				✓	Veterans who are eligible or certain dependents of deceased or disabled veterans.		Contact the Veterans' Services Office at Delta College.
STATE OF MICH. PROGRAMS								
MICHIGAN ALTERNATIVE STUDENT LOAN PROGRAM (MI-LOAN)	✓	✓	✓			Cost minus Financial Aid = Need. Borrower must pass credit worthiness test.	✓	Obtain MI-LOAN packet from bank or credit union or Delta's Office of Financial Aid.
MICHIGAN COMPETITIVE SCHOLARSHIP PROGRAM	✓	✓	✓	✓		Students who qualify as semi-finalists on ACT test. Awards made by State of Michigan Department of Education.	✓	Take the ACT test in high school. If eligible, list Delta College (002251) in Section G of FAFSA.
MICHIGAN INDIAN TUITION WAIVER	✓			✓		Must have written certification from tribe of being at least 25% Native North American and proof of one year Michigan residency.		Obtain ITW application from Student's Tribal Office.
MICHIGAN WORK-STUDY	✓	✓	✓	✓	✓		✓	
MICHIGAN EDUCATIONAL OPPORTUNITY GRANT PROGRAM	✓	✓	✓	✓	✓		✓	
MICHIGAN ADULT PART-TIME GRANT	✓	✓	✓	✓	✓	Students who are part-time, independent, and out of high school for a minimum of two years.	✓	
SINGLE PARENT/HOMEMAKER/SEX EQUITY GRANT	✓	✓	✓			Low income single parents, displaced homemakers, and non-traditional students enrolled in vocational/community services programs.	✓	Contact Single Parent/Sex Equity Coordinator for determination of eligibility.
TUITION INCENTIVE PROGRAM (TIP)	✓	✓		✓		Students under the age of 20 at the time of high school graduation or GED completion and who have been determined eligible by the MI Family Independence Agency (FIA) based on Medicaid receipt.		Contact high school guidance counselor, FIA or the Delta College Office of Financial Aid for a TIP application prior to high school graduation or GED completion.
DELTA COLLEGE PROGRAMS								
BOARD OF TRUSTEES SCHOLARSHIP	✓				✓	Tri-County high school graduates recommended by their guidance counselors. Based on academic excellence.		Contact your high school guidance counselor.
ADULT EDUCATION SCHOLARSHIP	✓				✓	Tri-County adult ed graduates recommended by their high school directors. Based on academic excellence.		Contact the director of your adult education high school.
PRIVATE DONOR SCHOLARSHIP	✓	✓			✓	Students must meet the selection criteria of the various donors. In most cases, students should have a GPA of 3.0 or better and show financial need.	✓	Complete the Delta College scholarship application.
SHORT TERM LOAN						Students who demonstrate ability to repay and pass credit check.		Obtain application in Finance Office. \$25 non-refundable fee.

- A. MUST MEET STANDARDS OF ACADEMIC PROGRESS FOR FINANCIAL AID RECIPIENTS.
 B. MUST NOT OWE A REFUND OR BE IN DEFAULT ON ANY TITLE IV AID.
 C. MUST DEMONSTRATE FINANCIAL NEED AS DETERMINED BY THE FEDERAL FORMULA.
 D. MUST BE A MICHIGAN RESIDENT.

- E. MUST BE ENROLLED IN A DELTA COLLEGE ACADEMIC DEGREE OR CERTIFICATE PROGRAM.
 F. COMPLETE AND SUBMIT THE FREE APPLICATION FOR FEDERAL STUDENT AID ACCORDING TO THE DIRECTIONS PROVIDED. BE SURE TO LIST DELTA'S TITLE IV CODE (002251) IN SECTION H.

Financial Aid

The Delta College Office of Financial Aid administers a comprehensive program of financial assistance to help you, if you are qualified, with the cost of attending college. Funds are made available by Delta, the State, the federal government, organizations, and individuals to assist you if you demonstrate financial need and/or outstanding scholarship. All application forms required to begin the financial aid process are available from the Delta Admissions and Financial Aid Offices and area high schools. Forms for the next academic year (August through May) are available the preceding January and you should pick them up and follow the application procedures as early as possible. You may also apply on the Internet at <<http://www.fafsa.ed.gov>>. The application process can take from six to 8 weeks and applications filed less than two months prior to registration will usually not be processed in time for registration and may be received too late to be awarded some types of aid.

Application Procedures

1. Complete the Free Application for Federal Student Aid (FAFSA). If you are a returning student, you should complete the Renewal Application mailed to you by the federal government. If you do not receive one by January 1, you should complete the FAFSA. Be sure that you indicate Delta's College Code, 002251, in Section G, on the FAFSA so that we can receive your FAFSA information electronically. When you have read the directions carefully and accurately answered every question, sign the form and follow the mailing directions. This will generate a Student Aid Report (SAR), which will be sent directly to you.
2. When you receive your SAR, look it over carefully to make sure it is correct, since the information on this SAR will be used to determine your eligibility for the Federal Pell Grant and, regardless of Pell eligibility, for most other types of aid. If corrections are needed take the SAR to the Office of Financial Aid so that we can submit the corrections electronically.

In addition to demonstrating need, to be eligible for aid from federal and State programs you must, in most cases, enroll and attend at least half-time; must maintain satisfactory academic progress as defined by the financial aid programs and Delta College (see Section IV, Academic Policies & Information, Academic Status for Financial Aid Recipients); must be enrolled in a program of study leading to a certificate or degree; must be a U.S. citizen or permanent resident of the U.S.; must not be in default on any student loan; and must not owe a repayment on any federal grant. Due to current regulations, if you do not have a high school diploma or a G.E.D., you must prove your ability to benefit by receiving minimum scores as determined by the U.S. Department of Education on one of the tests approved by that Department. If ability to benefit applies to you, you should contact the Delta College Assessment/Testing Services Office.

When all the above steps have been taken and all eligibility requirements met, you will be considered for all programs administered by the College. The financial assistance offered to you may include one of more of the programs listed on the chart on page 14. You will receive a letter showing the amounts and types of financial aid available to you as a full-time student. Enrollment at less than 12 credits will reduce your award. Pell Grants must be reduced at less than full-time enrollment and most other programs will also be reduced.

At full-time enrollment, you may receive a maximum of one-half of the annual Pell Grant for which you are eligible in any one semester. If you do not receive Pell Grant for full-time enrollment for both Fall and Winter Semesters, you may be awarded up to the unused portion of your Pell Grant for the Spring Semester. Other grants, scholarships, and work-study are awarded to Spring Semester applicants as available.

Stafford Loan eligibility is based partly on the anticipated enrollment status of the applicant. If you register at a status below that which was used to determine your eligibility for the loan, your eligibility will have to be recalculated and the approval may have to be cancelled. All Federal Stafford and Parent (PLUS) Loans are disbursed in two payments, with checks co payable to the borrower and the College. The earliest that any disbursement check for a semester is released is after you have completed 30 days of attendance. If the loan period is only one semester in length, the second check is released after the midpoint of the semester has passed. You must maintain eligible enrollment status and satisfactory academic progress in order to receive any student loan check.

Every Stafford Loan borrower must have attended an Entrance Loan Information Meeting at Delta College before receiving their first Stafford Loan check.

Rights of Financial Aid Applicants

1. You have the right to know what financial aid programs are available.
2. You have the right to know the deadlines for submitting applications for each of the financial aid programs available.
3. You have the right to know how financial aid will be distributed, how decisions on that distribution are made, and the basis for these decisions.
4. You have the right to know how your financial need was determined.
5. You have the right to know what resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need.
6. You have the right to know how much of your financial need as determined by the institution has been met.
7. You have the right to request an explanation of the various programs in your student aid package.
8. You have the right to know the Delta College refund policy.
9. You have the right to know what portion of the financial aid you received must be repaid, the payback procedures, the length of time you have to repay, and when repayment is to begin.
10. You have the right to know how Delta College determines whether you are making satisfactory academic progress and what happens if you are not.

For an explanation of any of the above rights, please come in to the Office of Financial Aid and see a Financial Aid Representative.

Responsibilities of Financial Aid Applicants

1. You must complete all application forms accurately and submit them on time to the right place.
2. You must provide correct information. In most instances, misreporting information on financial aid application forms is a violation of law and may be considered a criminal offense which could result in indictment under the U.S. Criminal Code.
3. You must return all additional documentation, verification, corrections, and/or new information requested by either the Office of Financial Aid or the agency to which you submitted your application.
4. You are responsible for reading and understanding all forms that you are asked to sign and for keeping copies of them.
5. You must accept responsibility for all agreements that you sign.
6. You must perform the work that is agreed upon in accepting a Work-Study job.

Financial Aid recipients must meet Standards of Academic Progress to continue to receive aid. See page 92 for Standards of Academic Progress for Financial Aid Recipients.

Veterans/Reservists Information

How many times have you heard someone say, "I wish I had taken advantage of the G.I. Bill while I had the chance." Well, now you have the chance, and with a little help from your fellow veterans, you can put a career in your future.

The Veterans Services Office serves veterans, reservists, and dependents of veterans. We can help you:

- Explore benefits to which you are entitled
- Document your military training for college credit
- Prepare the forms and documentation required by the Department of Veterans Affairs for veterans education benefits
- Assist in upgrading discharge status
- Contact outside agencies for other assistance
- Take advantage of career planning and academic support services

Veterans Education Benefits

Payments are based upon the number of credits in which you are enrolled and the length of the courses. The payment is made directly to you each month by the Department of Veterans Affairs if you maintain satisfactory progress and follow an approved program. **You should be prepared to pay your tuition at the time of registration for academic courses each semester.**

Your Responsibilities

Transfers: You must have your official transcript(s) sent to the Delta College Admissions Office prior to enrollment for credit evaluation.

Certifying: You must certify each semester at the Veterans Services Office. Bring your schedule showing that your tuition and fees have been paid.

Program Choice: You may receive benefits **only for those courses necessary for graduation.** Any deviations from the program guidelines must be discussed with the Veterans Services Office.

Repeated Courses/Audit Grades: You may not receive VA benefit payments for courses in which you previously earned a satisfactory grade. Also, VA benefit payments are not made if you audit courses. Should you take a course under the pass/no credit grade option, the VA will not pay benefits for a "NC" (no credit) grade.

Failing Courses: You are expected to successfully complete all courses in which you enroll. If a failing grade is assigned, **YOU MUST FILL OUT A STATEMENT OF ATTENDANCE FORM.** This form is available at the Veterans Service Office. Failure to provide this statement will result in the College reporting the first day of the semester as the last day of attendance for the course(s). This will result in an overpayment of benefits.

Satisfactory Progress: You must be making satisfactory progress in your program and toward fulfillment of graduation requirements. The policy for Satisfactory Progress is located on page 92 of this catalog.

Dropping Courses: You are expected to file a drop form at the Records and Registration Office as soon as you stop attending class. You **must also notify the Veterans Services Office immediately** upon dropping or withdrawing from classes in order to modify certified credit hour load. It is to your benefit to report mitigating circumstances that have affected attendance in classes.

Attendance Policy: You will be required in the Certificate Program to adhere to the attendance requirements imposed by external regulatory agencies beyond those stipulated by Delta College that are listed on page 90 of this catalog.

Address/Dependent Changes: Notify the Veterans Services Office of any changes in your address or number of dependents.

More About Military Credit

By providing a copy of your DD 214, you may be awarded two lifelong wellness (LW) activity credits and two lifelong wellness theory (LWT) credits as a result of completing basic training.

Additional college credit for military training/experience may also be granted. If you wish to have additional credit, submit copies of certificates and other supporting documents to the Veterans Services Office. The documents will be prepared and submitted to the Records and Registration Office for official evaluation. Written confirmation of credit awarded will be mailed to you.

An Employer's Opinion

"The UAW-GM Legal Services Plan has been very impressed with the qualified candidates Delta College has provided to our office. We will definitely look to Delta College for assistance in fulfilling our future employment needs."

Sue Lemanski, UAW-GM Legal Services Plan, Saginaw

Steps to Success Process

As a new Delta student, your goal and ours is your success. We know through experience that if we can help you get off to a good start, you are more likely to be successful in reaching your goals. The Steps to Success Process is designed to help you get that good start. You only participate in Steps to Success once as a new student.

Step 1: Apply for Admission and Financial Aid

You can obtain an Admission Application from area high schools and agencies, and our Admissions Office. Be sure to have official copies of your transcripts (high school/college/G.E.D.) sent to the Admissions Office. An Application Fee of \$10 must be submitted with your application.

If you are planning to apply for financial aid and you haven't already completed the federal financial aid form, begin the process **now**. Complete the Free Application for Federal Student Aid (FAFSA), which has no application fee. Be sure that you indicate Delta College's Code, 002251, in Section H, Number 92 on the FAFSA so that we can receive your FAFSA information electronically. Mail your completed FAFSA in the envelope provided to the federal government's Processing Center. You will receive back a Student Aid Report (SAR). Look it over carefully to make sure it is correct. If corrections are needed, bring it to the Office of Financial Aid in the Welcome Center, D-101, so that we can submit the corrections electronically. You also need to complete a Delta College Application for Financial Aid and submit it to the Office of Financial Aid, D-101.

Step 2: Complete Assessment

Assessment is not a test which you pass or fail. It is a process to help us identify your current skill levels in English, reading and math. Your Assessment scores, as well as other skill indicators, will help you and your Delta counselor select the right beginning courses for you. Assessment can be completed by 1) submitting acceptable ACT scores (20 in English and 19 in Math); 2) completing Asset; and 3) completing COMPASS. COMPASS is a computerized assessment available on campus and will take 1-1/2 to 2 hours. Sessions are held both on and off-campus, mornings, afternoons, evenings and occasionally Saturdays. Sessions last two to two and one-half hours.

Step 3: Attend Orientation and Advisement

You will learn more about our programs of study, courses, and services designed for your success. You will meet your advisor, discuss your Assessment results, and receive assistance in making a tentative class schedule. You will receive materials including a catalog and a schedule of academic courses. Orientation and Advisement sessions are offered mornings, afternoons, and evenings.

Step 4: Register and Enroll in Courses

The earlier you complete Steps 1, 2, and 3, the sooner you can register. This means a better selection of courses should be available. At registration, you officially enroll in courses, pay your tuition and fees, and receive a copy of your class schedule. Purchasing of books can be done in our College Bookstore.

Financial Aid Applicants Note: If you have received your Award Letter from Delta's Office of Financial Aid, you may charge your tuition, fees, and books up to the amount you were awarded.

Step 5: Successful Completion of Courses

Success is defined by you and there are as many definitions of success as there are Delta students. Completing the courses in which you enroll, however, is a major key to success.

A few common success goals of Delta students include:

- Earning an Associate degree or Certificate
- Updating job skills
- Transferring to a four-year college or university
- Obtaining a new or better job
- Learning for personal enjoyment or enrichment
- Learning a new skill

Exemptions for Assessment and Test Interpretation/Advisement (Steps 2 and 3) will be given only for the following reasons:

- You enrolled at Delta College Fall Semester 1986 or earlier and earned one or more academic credits.
- You earned a minimum score of 20 on the English ACT subtest and a minimum of 19 on the Mathematic ACT subtest. A copy of these scores must be given to the Admissions Office.
- You are enrolling in five or less credits per semester (three or less credits per Spring/Summer Session) excluding **all** English, business communications, business computation, and math courses.
- You have earned an Associate degree or higher from a regionally accredited college. An official copy of your final transcript or diploma must be sent to the Delta College Admissions Office.
- You are a transfer student who has successfully completed English composition and math courses equivalent to Delta College courses ENG 111 or OSE 151, and MTH 100 or higher (with a minimum 2.0 GPA). An official copy of your final college transcript must be sent to the Delta College Admissions Office.
- You are a Guest student from another college. A completed official Guest Application Form is required from your current college or university.
- You plan to enroll solely in an English as a Second Language course. Assessment and Test Interpretation/Advisement (Steps 2 and 3) must be taken upon completion of your ESL course.

Students who have the necessary documentation for exemption should contact the Delta College Admissions Office to request exemption status.

Registration

Registration at Delta generally takes place three times a year, starting in April for the Fall Semester, starting in early November for the Winter Semester, and starting in March for the Spring/Summer Semester.

The Registration Process

Any student - new, returning, readmitted, approved transfer, and approved guest - may register by telephone.

- As a new student, you will be assisted with phone registration during your orientation session.
- As a returning student you may be given priority to register by telephone according to the number of credits you have completed at Delta (including a maximum of 38 transfer credits).
- If you are designated an official Guest or transfer student by the Admissions Office, you will register by telephone at the time any student can register.

Each semester, open and late registration periods are held on the Campus for any student who has missed the above registration opportunities.

You are expected to register during the official registration periods. You may register after the completion of the official registration periods but before the midpoint of a course with the written permission of the instructor. You may not register past the midpoint for any course. It is College policy that if you have financial obligations to Delta College, you will not be allowed to register until the obligations have been paid or cleared.

For detailed information regarding phone and Campus registration, you should consult the Academic Class Schedule booklet, which is published each semester and available in the Records and Registration Office, Counseling Center, Admissions Office, plus the Planetarium and Learning Center in Bay City; the Ricker Center, International Centre, and First Ward Center in Saginaw; the Midland Center, prior to the start of each registration period.

Cancelled Courses: The College reserves the right to cancel any course which does not have a sufficient enrollment of students to warrant its continuation. You should attempt to add another course or apply for a refund either at registration or at the Records and Registration Office. You may also request a refund by phone or letter to the Records and Registration Office.

Course Schedule Changes: You are expected to complete the courses in which you are registered. If a change is necessary, you must file an add/drop form either at registration or at the Records and Registration Office, or send a letter to the Records and Registration Office requesting the drop or withdrawal. The date this form is processed or the postmark on the envelope is the official add/drop date for the course.

Added Courses: In general, you may add courses through the first five instructional days of a semester or first three instructional days of a 7 1/2 week session. Courses added after these days require written permission of the instructor. You may not register past midpoint of any course.

Student-Initiated Drops: For courses officially dropped within the first 11 calendar days of a regular semester or within the first five calendar days of an abbreviated session, no grade will be reported or recorded on the official College transcript. If the course is officially dropped from the 12th calendar day through mid-course, you will receive a grade of "W."

When an official withdrawal/drop is initiated after mid-course, the grade will be a "WE" (withdrawal failing) or "WP" (passing course work at date of withdrawal/drop). All official withdrawal/drops must be completed prior to the end of the 12th week of 15-week semester courses.

If you do not officially withdraw/drop after mid-course, the instructor will assign an appropriate final letter grade ("A" through "E") in relation to total course requirements achieved.

Instructor-Initiated Drops: An instructor has the option of authorizing a grade of "W" for you if you have missed an excessive number of course hours of instruction or you lack the course prerequisites. This authorization may be initiated through mid-course and reported to the Records and Registration Office.

Upon receipt of an authorization, the Records and Registration Office will notify you in writing of, and the reason for, the drop.

If you wish to appeal an instructor-initiated drop, the contact must be with the course instructor. If necessary, mediation may be requested of the appropriate Division Chair. All appeals must be in writing, signed by you as the person requesting the appeal, and received within one week following notification of the drop.

Withdrawal from College: To completely and officially withdraw (drop all courses), you must complete an add/drop form either at registration or at the Records and Registration Office. Withdrawal may also be requested by mail and the postmark on the envelope will be the official withdrawal date used to determine eligibility for tuition refund and grades.

Course/Credit Load

If you are a full-time student, course load is 12-18 credits in a 15-week semester and 6-9 credits in a 7 1/2-week session. To register for a course load in excess of these limits, you must obtain special permission from a counselor before registration. Approval of an excess course load depends upon your previous academic record.

Tuition and Fees

Tuition and fees must be paid in total at designated times (see Academic Classes Schedule booklet) each semester or session, and may be paid by cash, check, Visa or MasterCard, or charged to approved financial aid. Tuition is assessed by credit based on your residency status. The per-credit tuition rate for each semester is published in the Academic Classes Schedule booklet and is subject to change without prior notice by action of the Board of Trustees.

Fees are charged for specific courses. Fee information is listed in the Academic Classes Schedule booklet and subject to change without prior notice.

If you are a resident of the Delta College district, 60 years of age or older, you may register for courses offered by the College and receive a grant reducing the amount of tuition due by 50%. The grant does not apply to fees (registration, contact hour, high cost, course, etc.), books, supplies, trip costs, or other special fees. The College reserves the right to exempt certain courses or programs from grant eligibility. To be eligible for the Senior Citizen Grant Program, you must have a Delta College identification number. The identification number is issued by the Admissions Office after completing a brief application form, which requires proof of age.

A registration fee of \$21 is charged to each academic student once each semester or session. A registration fee of \$5 is charged to each Community Services student once each semester or session. Students registering in both academic and Community Services courses will pay both registration fees once each semester or session.

A late registration fee of \$10 per credit hour is charged to students who register after the 100% refund period of a course.

A multi-registration fee of \$25 is charged to students who register, do not pay by the deadline, and then re-register for a course.

Textbooks and Equipment: You are required to purchase your own textbooks, supplies, personal attire (i.e., lab coats, clinic shoes, etc. as required by courses), special equipment and tools, and attire and equipment for physical education courses. Most of these items may be purchased at the College Bookstore, which is located in the Commons/Cafeteria area and open during all College registration hours.

"Counselor's Quote"

C. Gary Martinez: Buena Vista High School

"If you want the best beginning in your area of study dollar for dollar, Delta is your best investment."

Refund Policy

You may drop courses by letter or in person. If you drop by letter, the postmark will be considered the drop date. You may also drop by letter if deadlines fall on Saturday or Sunday, when offices are closed.

Tuition and Special Course Fee:

100% refund: from the official start date and through the 7th calendar day* (including Saturday and Sunday).

50% refund: from the 8th through the 11th calendar day* (including Saturday and Sunday) of the official start date of the course.

No refund: after the 11th calendar day (including Saturday and Sunday) of the official start date of the course.

Deadlines may fall on a Saturday or Sunday when offices are closed. Students may drop by letter and the postmark will be considered the drop date.

For courses less than four weeks but more than 2 days:

100% refund: through the first quarter of the total days** of the course.

50% refund: through the second quarter of the total days** of the course.

No refund: after the second quarter of the course.

For one or two day courses:

100% refund: before the start date of the course.

No refund: after course begins.

Courses which have nonrefundable tuition or course fees are noted in the schedule booklet.

Registration Fee

No refund, unless all courses are cancelled by the College.

Offset

During the 12th through the 25th day from the official start date listed in the schedule, students are permitted to offset equal credits and course fees within the same academic discipline (for example, switching from one ENG course to another ENG course, but not from an ENG course to a MTH course) with the written recommendation of their instructors through the add/drop procedure. For credits or fees added in excess of credits dropped, additional tuition and fees must be paid. During this period, grades of "W" will not be assigned to courses dropped through the offset process. Offset cannot be done between sessions (for example, dropping an ENG course during the first 7 1/2 week session and adding an ENG course during the second 7 1/2 week session or dropping a MTH course during the Spring 7 1/2 week session and adding a MTH course during the Summer 7 1/2 week session).

Financial Aid Recipients

For students receiving financial aid, refunds are returned in the following order: to Federal Loan Programs, to Federal Pell Grant, to Federal SEOG, to other Title IV (federal) aid programs, to State of Michigan Programs, and to the student.

Students receiving financial aid who completely withdraw, see the Office of Financial Aid for details of pro rata refund and federal refund policies.

Special Refund Consideration

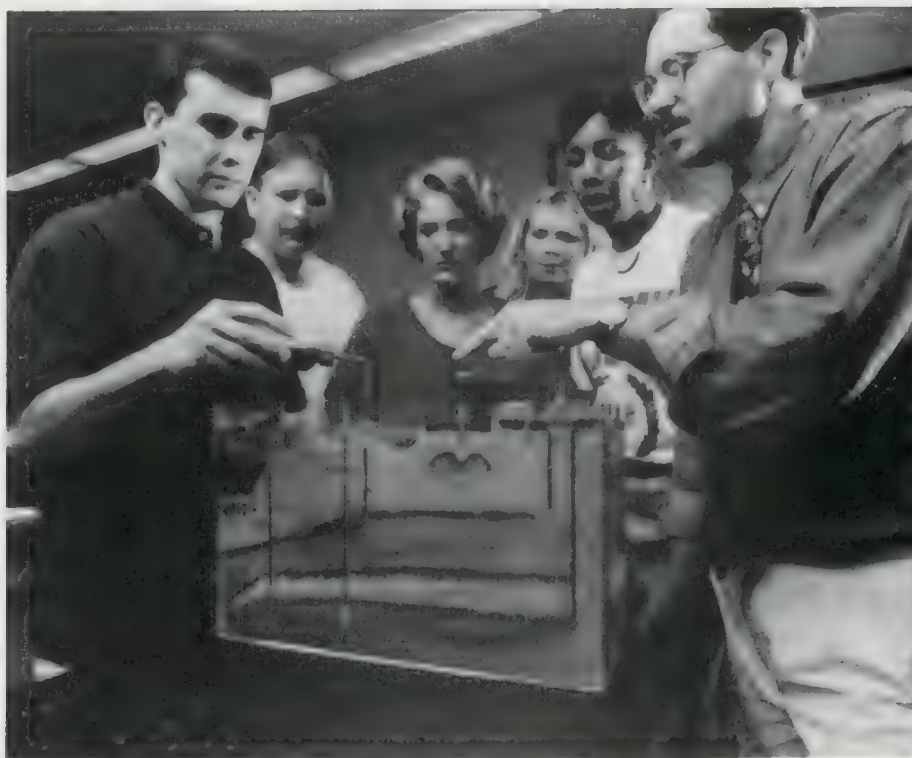
Such consideration by the Director of Records/Registration is available for drops due to medical reasons or death by submitting a medical statement to the Records & Registration Office through the offset period.

*Calendar day is defined as all the days of the week including Saturday and Sunday.

**Total days is defined as all the days of the course from the start date to the end date listed in the schedule booklet including Saturdays and Sundays.



Broadcasting & Communication Program



Environmental Technology Program

PROGRAMS OF STUDY

1. Transfer Programs
2. Transfer Procedures
3. Articulations/Special Agreements
4. University Transfer Programs
5. Academic Occupational Programs,
Certificates and Associate Degrees
6. Health Program Procedures
7. Academic Occupational Program Guides
8. Non-Degree Programs and Activities



TRANSFER PROGRAMS

Code	Program Title	Associate in Arts Degree	Associate in Science Degree
40174	Agriculture		X
40873	Architecture, Pre		X
40382	Art Majors	X	
40797	Aviation, Pre		X
40422	Biology Majors		X
40423	Biotechnology, Pre		X
40180	Business Administration	X	
40464	Chemical Technology		X
40462	Chemistry Majors		X
40144	Computer Information Systems	X	
40410	Computer Science	X	X
40424	Conservation		X
40516	Dentistry, Pre		X
40582	Dietetics, Pre	X	X
40385	Drama	X	
40482	Economics	X	
40342	Education, Art	X	
40346	Education, Business	X	
40350	Education, Elementary	X	
40358	Education, Industrial Arts	X	
40362	Education, Music	X	
40363	Education, Physical	X	
40364	Education, Pre-School	X	
40366	Education, Secondary	X	X
40368	Education, Special	X	
40816	Engineering, Pre		X
40318	English	X	
40465	Environmental Science, Pre		X
40320	Foreign Language Majors	X	
40426	Forestry		X
40484	Geography	X	X
40472	Geology	X	X
40485	History	X	
40354	Home Economics	X	X
40492	International Studies	X	
40323	Journalism	X	
40729	Law, Pre	X	X

TRANSFER PROGRAMS (CONTINUED)

Code	Program Title	Associate in Arts Degree	Associate in Science Degree
40390	Liberal Arts	X	X
40414	Mathematics		X
40538	Medical Technology, Pre		X
40532	Medicine, Pre		X
40430	Mortuary Science, Pre		X
40394	Music Majors	X	
40428	Natural Resources		X
40561	Nursing, Pre (BSN)	X	X
40572	Occupational Therapy, Pre	X	X
40540	Optometry, Pre		X
40542	Osteopathy, Pre		X
40586	Pharmacy, Pre		X
40487	Philosophy	X	
40576	Physical Therapy, Pre		X
40488	Political Science	X	
40490	Psychology	X	
40774	Social Work	X	
40496	Sociology	X	
40326	Speech	X	
40585	Sports Medicine		X
40398	Theater	X	
40432	Veterinary Medicine, Pre		X

“Counselor’s Quote”

Richard Mosier: Western High School

“We are happy to have a school like Delta in our community. With their high academic standards and ease in transferring to a four year institution they are known as an excellent community college. Regardless of their program of choice, students leave Delta College well prepared for their last two years. In 39 years of teaching I’ve found that Delta is a great place all around.”

Transfer Programs

TRANSFER MISSION STATEMENT

To facilitate a seamless transition of students and course credits toward degree completion, Delta College is committed to providing academic programs, support services and formal articulation processes for students transferring to or from other accredited institutions.

Delta College is an excellent choice for students planning to earn a Baccalaureate (Bachelor's) degree. While enrolled at Delta in a transfer degree program, you will enjoy these benefits:

- A Campus that is convenient to your home and job.
- Costs that are well below four-year colleges and universities.
- Classes that are small and interactive.
- Faculty who are sincerely concerned about your success and available to provide individual assistance.
- Personal student services and academic advising that will support your career decision-making and educational needs.
- Transfer courses that are recognized by respected colleges and universities throughout the United States.
- Time to establish firm career goals and adjust to college-level studies.
- Opportunity to refine your academic abilities and improve reading, composition, mathematics and study skills.

Be assured that Delta's Associate in Arts and Associate in Science Degree Programs provide you with a solid academic foundation required for success at your chosen four-year college or university.

Basically, Delta College provides the first half (freshman and sophomore years) of most Baccalaureate degree programs. After completing your Associate in Arts or Associate in Science Degree at Delta College, you will in most cases be qualified to transfer to complete the second half (junior and senior years) of the Baccalaureate degree if you have planned carefully, followed the academic advising provided by Delta counselors, and successfully completed the required courses at the minimum grade level stated by the four-year college or university. It is particularly important for you, as a transfer student, to choose your four-year school in your freshman year because the preparation needed at Delta College to enter one transfer college may be different from the preparation and admission requirements at another school. Professional counselors are available at Delta College to assist you in choosing your college or university and in planning your transfer program to fit that school.

Detailed program guidesheets, listing suggested Delta courses and providing career information and admission specifics, are available from the Counseling Center. Other transfer programs can be individually developed with a Delta counselor. Also, with the addition of some courses, almost any Delta College Occupational Associate in Business Studies Degree or Associate in Applied Science Degree may be utilized in part toward fulfilling a portion of a Baccalaureate degree. Transferability of these occupational programs and courses depends primarily upon the major area of study in the Baccalaureate degree and the senior college of choice.

MACRAO Articulation Agreement with Senior Colleges

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Articulation Agreement was established to improve transfer student articulation between two-year and four-year colleges and universities in Michigan. Delta College is a participant in this MACRAO Agreement with the following four-year institutions:

- | | |
|---------------------------------|-------------------------------------|
| * Adrian College | * Kalamazoo College |
| * Albion College | * Lake Superior State University |
| * Alma College | * Lawrence Technological University |
| * Aquinas College | * Madonna College |
| * Baker College | * Michigan State University |
| * Calvin College | * Michigan Technological University |
| * Central Michigan University | * Northern Michigan University |
| * Cleary College | * Northwood University |
| * Detroit College of Business | * Oakland University |
| * Eastern Michigan University | * Olivet College |
| * Ferris State University | * Saginaw Valley State University |
| * Kettering University (GMI) | * Siena Heights College |
| * Grand Valley State University | * Spring Arbor College |
| * Hope College | * Western Michigan University |

* Indicates four-year colleges and universities which have attached provisions to their Agreements. Usually these can be satisfied after transferring. These provisions can be obtained from the four-year institution.

This Agreement provides that if you complete either the Associate in Arts Degree or the Associate in Science Degree, or all of the following requirements at Delta College and are accepted as a transfer student by one of the above schools, you will have satisfied the basic general education requirements of that school. The MACRAO Articulation Agreement does not guarantee admission into a particular college or into any particular program at that college. This Agreement applies to basic studies/general education and does not exempt the transferring student from meeting specific requirements for a particular program or program of study; i.e., education, engineering, business, social work. Acceptable courses are specified under the Associate in Arts and Associate in Science Degree Requirements on page 95. The specific requirements of the MACRAO Agreement are:

- | | |
|--|--------------------|
| 1. English Composition | 6 Semester Credits |
| 2. Humanities
(in at least two subject areas) | 8 Semester Credits |
| 3. Social Sciences
(in at least two subject areas) | 8 Semester Credits |
| 4. Natural Sciences
(in at least two subject areas; must include at least one lab course) | 8 Semester Credits |

Transcripts of Associate in Arts or Associate in Science Degree graduates will automatically indicate that MACRAO Agreement requirements were fulfilled. Non-graduates must request the Records and Registration Office to have the MACRAO Agreement put on their official transcripts if requirements were fulfilled.

Transferability of Delta Courses

Based upon information provided to Delta College from the major public Michigan four-year universities and Northwood University, Delta's counseling staff has developed a composite listing that provides specific course equivalency information about how Delta College courses will transfer. The transferability of courses between colleges depends basically upon:

1. The school into which you transfer.
2. Your program of study (program, or more specifically, the major and/or major and minors you are seeking).
3. The grade you receive in the course. In general, a C or better is necessary; a B in "major" courses.
4. Whether or not the transfer college has an equivalent (same) course and if so, the number of credits acceptable for their course.
5. The level of the course. For example, an intermediate algebra course may be acceptable for one program, but not for others that require higher levels of mathematics.

Delta College has liaison relationships with many four-year colleges and universities regarding their transfer requirements and program recommendations; however, if you wish to transfer credits from Delta to another school, it is **your** responsibility to be aware of that institution's transfer policies and program requirements.

There is a limit to the number of credits you may transfer into a four-year college or university. Generally, this is 62 credits or half the total number of credits required for the Baccalaureate degree.

You can review in the Counseling Center a printed copy of how your Delta courses should be accepted at the college into which you are transferring. Michigan universities for which transfer course information is available are: Central Michigan University, Eastern Michigan University, Ferris State University, Grand Valley State University, Lake Superior State University, Michigan State University, Michigan Technological University, Northern Michigan University, Northwood University, Oakland University, Saginaw Valley State University, University of Michigan-Ann Arbor, University of Michigan-Flint, and Western Michigan University. In addition, check out this information on Delta's homepage at <<http://www.delta.edu/~tguides>>.

You should maintain close contact with your counselor for all possible assistance in registering for the proper courses and maintaining the necessary level of academic performance. While Delta College will make every effort to give proper guidance, you are responsible for your own choices and for developing your own educational plan.

Transfer Procedures

Evaluating Colleges

Transferring from one college to another is very common, but to make it a positive experience, you are encouraged to investigate four-year colleges and universities and their degree requirements; plan ahead; and work closely with your Delta College counselor, especially in selecting the correct courses for your transfer program. Discussed below are several important things to think about as you start evaluating various colleges and universities. You may investigate colleges at <<http://www.collegenet.com>> on the Internet.

The **academic climate** of the institution should definitely be explored. Compare your background and abilities with those of the present students at that particular college or university. The transfer institution's admissions staff and your Delta counselor can be very helpful in this regard. They are aware of the institution's selection criteria and how well previous Delta graduates have done. You should read carefully each institution's statement on admissions requirements to be certain you can meet them.

The **program offerings** of the various institutions need to be considered in your decision-making process. If you are interested in a specific field of study, you should look first at colleges and universities offering recognized and accredited programs in that area. Not all schools offer the same programs of study.

There are **non-academic factors** to consider also in making your college or university choice. How large is the student body? Is campus housing available? What is the nature of the community in which the school is located and how far is it from home? Does the institution provide the environment and opportunity for the types of extracurricular activities that you enjoy (e.g., sports, arts, student government)? Where and what types of jobs are their graduates getting and what type of placement services do they provide? Be sure to get answers to questions like these through visits to the campus, by looking at the catalog, on the school's homepage on the internet, or by talking to current students at the school. This information can help you choose an institution that fits your personal interests.

Your investigation should also include a thorough review of the **cost** of the college or university being considered. Usually the basic educational expenses of the institutions for an academic year can be determined from their current catalog. Then add on amounts for such items as personal expenses and room and board to come to a total that will realistically reflect your overall costs.

Last, but certainly not least, are the respective **application procedures for admission and financial aid**. You must submit all required admissions forms correctly and on time if you expect full consideration. You must also submit all financial aid forms correctly and on time. The schools often make their decisions about admission and financial aid soon after the deadline. They must decide on the basis of the material that they have in hand, so it is to your advantage to be prompt and accurate. All Michigan four-year institutions charge an admissions application fee and all have specific deadline dates by which your application and other necessary credentials (required test scores, high school and college transcripts) must be received.

"Counselor's Quote"

Allan Thiel: John Glenn High School

"The combination of vocational programs with an excellent transfer program makes me very willing to recommend Delta to students."

Transfer Degree Requirements

Each institution of higher education has its own requirements for admission, majors, general education, and so on. These requirements are stated in the college's official catalog or bulletin. Usually credits are defined as semester hours but some colleges and universities use the term or quarter hour system. To earn a Bachelor's degree, you will generally be required to fulfill the following:

- **General Education requirements.** Minimum number of credits earned in each of certain broad groups of courses, such as the humanities, the social sciences, the physical or natural sciences, and mathematics. Some institutions refer to these as distribution or core requirements.
- **Level requirements.** Minimum number of credits earned in courses on such levels as introductory, intermediate, and advanced, or in specific numbered levels of courses such as 300 and 400, commonly referred to as junior and senior-level courses.
- **Major or concentration requirements.** Minimum number of credits earned in a subject area of specialization (i.e., English, chemistry, business administration) for the degree. About one-fourth of the total number of credits required for a degree must be in the major or field of concentration.
- **Minor requirements.** Minimum number of credits earned in a second subject of concentration/specialization. Generally the number of credits required is about half to two-thirds required for a major. Not all degrees require you to declare a minor.
- **Residence requirements.** Minimum number of credits earned in attendance at the institution which is granting the degree (as opposed to transfer credits earned at another school). This is not to be confused with residency which refers to where one lives.
- **Elective requirements.** Minimum number of credits earned in optional courses that the student chooses.
- **Grade requirements.** Minimum cumulative grade point average of grades earned in all courses taken and often, in all courses taken in the major and/or minor. Some colleges and universities also require a minimum grade in specific courses.
- **Specific subject requirements.** Examples include: freshman-level English composition; two or more courses in physical education; two years of foreign language courses or a minimum level of proficiency in a foreign language as demonstrated on a specified examination; and computer literacy.
- **Credit requirements.** Minimum number of credits, typically 124 to 130 semester credits for a Bachelor's degree.

Transfer Procedures Checklist

It is important that you select, as early as possible, the institution to which you plan to transfer because schools differ markedly as to curricula offered and their corresponding requirements. If you plan to attend another college or university after the completion of your sophomore year at Delta College, you should:

- Seek academic advising from a Delta counselor so you will enroll in courses that best fit your needs, achievement level, program, and transfer institution requirements.
- Obtain a transfer college/university guidesheet and a program guidesheet from Delta's Counseling Center. Together, these two guidesheets will provide most of the basic information you will need to make the best decisions about both your career choice and transfer school.
- Check out the college or university's homepage on the internet. To see if they have one check <<http://www.collegenet.com>> and search that website.
- Visit transfer school campuses and make a list of questions in advance to use when you visit their Admissions Offices or other departments. Schedule appointments in advance if you would like a campus tour, want to visit a residence hall, or want to talk with specific personnel.
- Apply for transfer admission well in advance (almost a year) of the anticipated date of transfer. Admission application forms for most Michigan public and some Michigan private senior institutions are available in Delta's Counseling Center.
- Review the official catalog of your transfer college/university of choice. Current Michigan catalogs of many institutions are available for use in the Delta Counseling Center.
- If you served in the military, obtain and send an official copy of your record (DD214 form).
- Confer with transfer institutions admissions personnel who visit Delta annually (some twice a year). Times, dates, and places are posted in the glass case near the Counseling Center entrance and announcements regarding these visits are printed in the weekly Bulletin.
- Request that each college or university you have attended send an official transcript of your courses and grades. Schools usually charge a small fee and you must request these transcripts yourself, in person or in writing, since your signature must be provided. Transcripts will only be acceptable if they are mailed directly by the school and if they have the official seal/signature. Delta transcripts are requested from the Records and Registration Office.
- If required, copies of appropriate test scores (usually ACT or SAT scores) and your high school transcript should be sent. Usually this is only required if you have completed less than 24 to 30 transferable credits. This information is usually detailed in the transfer admission application directions.
- Complete the appropriate financial aid application materials early if you plan to apply for grants, loans, or scholarships. You must also request that each previous institution attended mail a financial aid transcript regardless of whether or not you ever applied for financial aid from that school. These financial aid transcripts are **not** the same as your academic transcript which contains courses and grades. They are requested from financial aid offices and there is no charge.

Delta Code	Delta Program	University	Degree	Program
20514	Dental Hygiene	SVSU	BAS	*Basics/need minor
15812	Electronic Engineering Tech	Ferris	BS	Computer Networks and Systems
15812	Electronic Engineering Tech	Ferris	BS	Education/need Gen. Ed. **
15812	Electronic Engineering Tech	Ferris	BS	Electrical/Electronics Engineering Tech
15812	Electronic Engineering Tech	SVSU	BAS	*Basics/need minor
15812	Electronic Engineering Tech	Wayne State	BSET	Electromechanical Engineering Technology
40465	Environmental Science/Haz Mat. Tech	Ferris	BS	Industrial & Environmental Hlth Mgmt.
40465	Environmental Science/Haz Mat. Tech	Ferris	BS	Education/need Gen. Ed. **
10212	Fashion Merchandising	SVSU	BAS	*Basics/need minor
10242	Financial Inst. Mgmt./Banking	SVSU	BAS	*Basics/need minor
25736	Fire Fighter Technician	Northwood	BBA	Management/Fire Science
25733	Fire-Industrial/Comm Security/Safety	Northwood	BBA	Management/Fire Science
25734	Fire Investigation/Prevention	Northwood	BBA	Management/Fire Science
25732	Fire Science/EMT	Northwood	BBA	Management/Fire Science
25731	Fire Science Technology	Northwood	BBA	Management/Fire Science
25735	Fire Science Tech/Leadership & Training	Northwood	BBA	Management/Fire Science
15867	Graphic Arts Technology	Ferris	BS	Education/needs Gen. Ed. **
15867	Graphic Arts Technology	Ferris	BS	Printing Management
15867	Graphic Arts Technology	SVSU	BAS	*Basics/need minor
25772	Human Services Technology	Ferris	BS	Human Services Technician
15879	Industrial Supervision	SVSU	BAS	*Basics/need minor
10216	Interior Design	SVSU	BAS	*Basics/need minor
10282	Legal Assistant	SVSU	BAS	*Basics/need minor
10293	Legal Office Professional	SVSU	BAS	*Basics/need minor
15883	Machine Tool Operations	Ferris	BS	Education/needs Gen. Ed. **
15883	Machine Tool Operations	Ferris	BS	Product Design Engineering Tech
15883	Machine Tool Operations	SVSU	BAS	*Basics/need minor
15881	Machine Tool Operations/Ind. Super.	Ferris	BS	Manufacturing Engineering Tech
10254	Management (General)	Ferris	BS	Business Administration Prereq: ***
10254	Management (General)	Northwood	BBA	Management
10254	Management (General)	Northwood	BBA	Marketing & Management-Dual Major
10254	Management (General)	SVSU	BAS	*Basics/need minor
10262	Management (Small Business)	Ferris	BS	Small Business Management
10262	Management (Small Business)	Ferris	BS	Business Administration Prereq: ***
10260	Management (Retail)	Ferris	BS	Retailing/Prereq: ***
10260	Management (Retail)	Ferris	BS	Marketing/Prereq: ***
10256	Management (Marketing)	Ferris	BS	Marketing Prereq: ***
10256	Marketing Management	Northwood	BBA	Management & Marketing-Dual Major
15820	Mechanical Design Technology	Ferris	BS	Education/needs Gen. Ed. **
15820	Mechanical Design Technology	Ferris	BS	Manufacturing Engineering Tech.
15820	Mechanical Design Technology	Ferris	BS	Product Design Engineering Tech.
15820	Mechanical Design Technology	SVSU	BAS	*Basics/need minor

Delta Code	Delta Program	University	Degree	Program
15820	Mechanical Design Technology	Wayne	BSET	Electromechanical Engineering Technology
15822	Mechanical Engineering Tech	Ferris	BS	Manufacturing Engineering Tech.
15822	Mechanical Engineering Tech	Ferris	BS	Product Design Engineering Tech.
15822	Mechanical Engineering Tech	SVSU	BAS	*Basics/need minor
15822	Mechanical Engineering Tech	Wayne State	BSET	Electromechanical Engineering Technology
20533	Medical Assisting	SVSU	BAS	*Basics/need minor
20533	Medical Assisting	Ferris	BS	Education/need Gen. Ed.**
20533	Medical Assisting	Ferris	BS	Health Care Systems Administration
10288	Medical Secretary	Ferris	BS	Health Care Systems Admin./Basics
10288	Medical Secretary	SVSU	BAS	*Basics/need minor
20560	Nursing-RN	Ferris	BSN	Nursing
30569	Nursing-RN/General Management	Ferris	BS	Education/need Gen. Ed.**
20560	Nursing-RN	SVSU	BSN	College of Nursing & Allied Health Science
20560	Nursing-RN	U of M-Flint	BSN	Nursing
10292	Office Professional-Acct.	SVSU	BAS	*Basics/need minor
10295	OP-Desktop/Multimedia Pub.	SVSU	BAS	*Basics/need minor
10146	OP-Information Processing	SVSU	BAS	*Basics/need minor
10292	Physical Therapist Assistant	Ferris	BS	Health Care Systems Admin./Basics
30575	Physical Therapist Assistant/Gen. Mgt.	Ferris	BS	Education/need Gen. Ed.**
20574	Physical Therapist Assistant	SVSU	BAS	*Basics/need minor
20544	Radiography	Ferris	BS	Health Care Systems Admin./Basics
30546	Radiography/General Mgmt.	Ferris	BS	Education/need Gen. Ed.**
20544	Radiography	SVSU	BAS	*Basics/need minor
15887	Residential Construction	Ferris	BS	Education/need Gen. Ed.**
20577	Respiratory Care	Ferris	BS	Health Care Systems Admin./Basics
30578	Respiratory Care/General Mgmt.	Ferris	BS	Education/need Gen. Ed.**
20577	Respiratory Care	SVSU	BAS	*Basics/need minor
20548	Surgical Technology	Ferris	BS	Health Care Management/Basics
20548	Surgical Technology	SVSU	BAS	*Basics/need minor
15827	Water Environmental Technology	Ferris	BS	OPTIONS: Industrial Environment Health Management Hazardous Waste Mgmt. Education/need Gen. Ed.**
15827	Water Environmental Technology	SVSU	BAS	*Basics/need minor
60897	Welding Engineering Technology	Ferris	BS	Education/need Gen. Ed.**
60897	Welding Engineering Technology	Ferris	BS	Manufacturing Engineering Tech
60897	Welding Engineering Technology	Ferris	BS	Welding Engineering Technology

DEGREES

BA = Bachelor of Arts
BS = Bachelor of Science

BAS = Bachelor of Applied Studies
BSN = Bachelor of Science in Nursing

BBA = Bachelor of Business Administration

***Basics** Means 39 hours of SVSU's Basics (English, Science/Math, Humanities, Social Science). Any minor of 18-24 credits of your choice that SVSU offers.

**** Gen. Ed.** Basic requirements for Ferris.

*****Additional** Credits for Ferris ECON 211, ECON 222, MTH 119, PSY 211, SOC 211

University Transfer Programs/Special Agreements

All Michigan universities will accept most of Delta College's courses. The universities below have signed an articulation agreement with Delta College to guarantee a smooth and successful transition.

Delta Code	Delta Program	University	Baccalaureate Program
40423	Biotechnology	Ferris	Biotechnology
40180	Business Administration	Central	All Business Majors
40180	Business Administration	Ferris	All Business Majors
40180	Business Administration	Kettering (GMI)	Management
40180	Business Administration	Northwood	Accounting, Management, Marketing Management
40180	Business Administration	SVSU	All Business Majors
40180	Business Administration	Oakland	Business Administration
40462	Chemistry	Ferris	Bachelor of Science in Education
40462	Chemistry	Kettering (GMI)	Bachelor of Science
40410	Computer Science	SVSU	Bachelor of Science (Computer Science)
40350	Elementary Education	Oakland	Bachelor of Science in Elementary Education
40350	Elementary Education	SVSU	Bachelor of Arts in Elementary Education
40538	Medical Technology	Ferris	Education/need Gen. Ed.**
40366	Secondary Education	Oakland	Bachelor of Science in Secondary Education
40816	Pre Engineering	Ferris	Surveying Engineering
40816	Pre Engineering	Kettering (GMI)	Bachelor of Science-Choice of Majors: Electrical, Computer, Industrial, Manufacturing Systems, Mechanical, Management and Chemistry
40816	Pre Engineering	Oakland	Bachelor of Science in Engineering
40816	Pre Engineering	SVSU	Bachelor of Science in Electrical Eng. & Mechanical Eng.
40540	Pre Optometry	Ferris	See Sheet I Ferris Optometry
40586	Pre Pharmacy	Ferris	See Sheet I Ferris Pharmacy
40390	Liberal Arts (Physics/Chemistry)	Oakland	Bachelor of Science in Health & Safety
40390	Liberal Arts (Political Science/Econ)	U of M/Flint	Masters in Public Administration
40414	Mathematics Education	Ferris	Bachelor of Science In Education

CENTRAL MICHIGAN UNIVERSITY - BACHELOR OF SCIENCE WITH AN OPTION IN COMMUNITY DEVELOPMENT AND CONCENTRATION IN HEALTH SCIENCES

With the Delta Associate Degree in Arts, Going the Distance (GTD) is a project between Delta and CMU where the delivery of the degree programs are entirely through distance learning. These learning experiences shall include Learning Packages, Independent Study, Telecourses, Online courses and other appropriate forms of distance delivery.

OAKLAND UNIVERSITY - BACHELOR OF GENERAL STUDIES

The Two-Plus-Two program provides for transfer of up to 62 semester credits. Students with associate degrees in any area except nursing may qualify for the Two-Plus-Two General Studies program.

NORTHWOOD UNIVERSITY - BACHELOR OF BUSINESS ADMINISTRATION

Will accept any associate degree from Delta. Northwood will also permit students to take the 3 +1 program for Business Administration with a major in management.

UNIVERSITY OF MICHIGAN-FLINT - BACHELOR OF APPLIED SCIENCE

Bachelor of Applied Science permits a student who has a degree in a technical field to transfer these credits to the University of Michigan-Flint and complete a baccalaureate degree in a program appropriate to the student's interest and needs.

TERMS USED IN THIS SECTION:

Articulation: The total programs and services for the transfer student.

Transfer: The exchange of credits, course, and curriculum.

Academic Occupational Programs

	Program Code	Associate in Business Studies	Associate in Applied Science	Certificate	Page Number
Accounting	10172	X			34
Applied Sacred Music (see Music)					34
Architectural Technology	15872		X		35
Automotive Service Educational Program (GM)	60842		X		35
Automotive Service Technology	15844/35845		X	X	36
Aviation Flight Technology	25795/35796		X	X	37
Broadcasting & Telecommunications:					
Radio	15314		X		38
Television	15315		X		38
Chemical Technology	15464		X		39
Child Development	25762/35763		X	X	40
Child Development & Teacher Assistant	25761		X		40
Clothing Specialist	10204/35205	X		X	41
Computer Aided Drafting	35865			X	41
Computer Information Systems:					
Accounting	10133	X			42
Computer Application Specialist	10135/35136	X		X	42
Programming	10137	X			42
Computer Marketing	10140/35141	X		X	43
Computer Numerical Control Technology	15862/35863		X	X	44
Construction Management	15875		X		45
Criminal Justice:					
Basic Police Training Certification Track	25725		X		46
Corrections	25726		X		46
Law Enforcement	25727		X		46
Custom Tailoring and Alterations	35207			X	47
Dental Assisting	20510/35512		X	X	48
Dental Hygiene	20514		X		49
Dual Degrees (Business & Health):					
Automotive Service Technology	30844	X	X		50
Dental Assisting/General Management	30518	X	X		50
Dental Hygiene/General Management	30519	X	X		50
Health Care Services/Paramedic	30585	X	X		50
Nursing/General Management	30569	X	X		50
Physical Therapist Asst/General Management	30575	X	X		50
Radiography/General Management	30546	X	X		50
Respiratory Care/General Management	30578	X	X		50
Surgical Technology/General Management	30550	X	X		50
Electronic Engineering Technology	15812		X		51
Environmental Technology	15466/35467		X	X	52
Fashion Merchandising	10212	X			53
Financial Institutional Management:					
Banking Management	10242/35242	X		X	53
Credit Union Management	10244	X			53
Fire Science:					
Fire Fighter Technician	25736		X		54
Fire Investigation/Prevention	25734		X		54
Fire Science Technology	25731		X		54
EMT	25732		X		54
Industrial/Commercial Security & Safety	25733		X		54
Leadership & Training	25735		X		54
Graphic Arts Technology:					
Design Option	15866/35869		X	X	56
Printing Option	15867/35868		X	X	56
Human Services Technician	25722	X			57
Industrial Supervision	15879/35880		X	X	57
Interior Design	10216	X			58
International Studies	35493			X	59
Legal Assistant	10282/35283	X		X	60
Machine Tool Operations:					
Industrial Supervision	15881		X		61
Machine Tool Operations	15883/35885		X	X	61
Management:					
General Management	10254	X			62
Marketing Management	10256	X			62
Office Services Management	10258	X			62
Quality Systems - Industrial Supervision	35880			X	63
Retail Management	10260	X			62

Academic Occupational Programs

	Program Code	Associate in Business Studies	Associate in Applied Science	Certificate	Page Number
Small Business Management	10262/35263	X		X	62
Management/Subsequent Degrees					
Business Management	10255	X			63
Northwood 3 + 1	85005	X			63
Mechanical Design Technology	15820		X		64
Mechanical Engineering Technology	15822		X		64
Medical Assisting	20533		X		65
Medical Secretary	10288	X			65
Music, Applied Sacred	35396			X	34
Nursing (ADN)	20560		X		66
Nursing (Transition)	20568		X		67
Office Professions:					
Administrative Assistant	10296	X			68
Office Assistant	35291			X	68
Office Specialist	35292			X	68
Paramedic	20585		X		69
Physical Therapist Assistant	20574		X		70
Practical Nurse (PN)	35563			X	71
Radiography	20544		X		72
Real Estate	10185	X			73
Refrigeration/Heating/Air Conditioning Technology	35988			X	73
Residential Construction	15887/35889		X	X	74
Respiratory Care	20577		X		75
Skilled Trades	60891		X		76
Surgical Technology	20548/35547		X	X	79
Water Environmental Technology	15827		X		80
Welding Engineering Technology	60897		X		80

Many courses in these Programs have prerequisites. See Section VI, Course Descriptions for prerequisite information.

Academic Occupational Programs Certificates and Associate Degrees

Many educational programs offered at Delta College are designed to prepare you for immediate employment in the job market. These occupational curricula provide you with the necessary skills and knowledge required for entry-level positions in career fields. In addition, most programs are diversified sufficiently to create some social and economic awareness. Attending full-time, you can complete most Certificate programs in one year and the majority of Associate degree programs in two years.

Most occupational programs are not specifically designed for transfer purposes to Baccalaureate degree-granting institutions. Transfer of all credits earned should not be expected.

In some programs, credits earned in an occupational program may be transferable into a Baccalaureate degree program at a four-year college or university; however, these programs are not designed specifically to parallel the first two years of university study. You should consult with your Delta counselor and the Admissions Office of the college or university into which you wish to transfer.

Terms Used in this Section

Certificate Option: A Certificate is awarded for the completion of various one-year occupational/technical curricula. Most Certificates prepare you for specific jobs or aspects of a job. Some Certificates are part of an Associate degree program, in which case the credit earned in the Certificate may be used toward the Associate degree.

Applied Associate Degree: The degree is broader in scope than the Certificate and includes a varying number of General Education and support courses.

Suggested Sequence: The order in which you should take your courses is suggested so that they will be of the most benefit to you. The sequence is indicated by blank and black boxes following each course title required for that program. You are responsible for checking course prerequisites prior to enrollment. In most cases the sequential arrangement is not mandatory. If it does not fit your needs, see your counselor or program coordinator.

Electives: These are courses applicable toward a degree or Certificate which may be chosen to meet your individual interests and needs.

Health Program Procedures

Clinical Application and Validation

1. Complete **all** prerequisite courses as specified in this catalog. This means transfer credit, waivers, and incomplete course work ("I" grades) must be posted on your transcript **prior to** application for validation.
2. Obtain from the Records and Registration Office or the Counseling Center the Validation Application for Health Clinical Programs Form. **You may be validated and eligible for one program only.**
3. Complete the Validation Application Form and **submit the completed Form to the Records and Registration Office.** These Forms may be submitted from mid-term to the end of the semester in which you will complete your prerequisites.
4. Records and Registration Office personnel will accept and date your completed Validation Application Form.
5. Validation Application Forms will be validated **only** by Records and Registration Office staff and processed no later than 30 days after the application deadline.
 - a. Qualified students will be assigned a semester and year of validation which will be entered into the student's computer record (e.g., F93 or W94 or S94).
 - b. Nonqualified students must submit another Validation Application Form **after successfully completing** all required prerequisites and other qualifications.
6. The semester and year of validation will be valid for three years. After that time, a new Validation Application must be submitted prior to attempting to register for the clinical sequence. You must have successfully completed all prerequisites/qualifications required at the time the new Application is submitted. Should you not register within the three-year period, it may be necessary to retake some prerequisite courses.

Note: Delta College reserves the right to modify validation and registration procedures for programs with low numbers of validated students at the end of the Winter Semester.

Clinical Registration - First Semester

1. A special telephone registration will be held for first semester clinical courses in the Health and Nursing Programs. Check each semester's Academic Class Schedule booklet for the special phone-in registration dates, times, and offerings. Special registrations are usually held May/June for Fall semester, November for Winter semester, and March for Spring/Summer semester. Other than Nursing, all health programs normally start in the Fall semester only.
2. Special phone registration will specify your registration priority according to program **and** semester and year of validation. The registration must be certified before students are officially registered. Once the clinical courses are full, an alternate list of qualified students will be developed to include those students who phoned in when specified.

Note: The alternate list is valid only for the semester. The registration alternate list will not be carried over to the next registration.
3. After completion of the special telephone registration, registered students will be required to attend clinical orientation sessions. Alternates may be invited to these sessions. Dates and times for orientations are listed in the Academic Class Schedule booklet.
4. Students not making payment by the due date (same as the first due date specified in the Academic Class Schedule booklet for all other students participating in phone registration) or voluntarily cancelling will be deleted from courses.
5. Open positions that result from the above deletions or cancellations in first semester clinical courses will be filled by students on the registration alternate list. Students who drop after the first week of classes will lose their validation and must resubmit a new Validation Application Form. Students will retain their validation through the first week of classes and may not validate for another program during this time.
6. Students are responsible for completing all clinical courses and requirements in effect on the day the clinical sequence begins.

Note: Individual faculty cannot add to published course capacity by accepting first-time enrolled students as overloads. Repeat students will be admitted in compliance with program re-entry procedures.

An Employer's Opinion

"We have hired several Delta students over the past few years. The Placement Office at Delta is professional and extremely easy to work with. Often, we have several candidates within a few days after contacting the Placement Office."

Jackie Bertsch, Human Resource Coordinator • Wade-Trim, Inc. • Bay City

Academic Occupational Program Guides

ACCOUNTING

Associate in Business Studies Degree

As a graduate of Delta's Accounting associate degree program, you will have the skills to be an accounting assistant. Complexity of the work will vary with the size and volume of the employee's activities and the firm's procedures. Most starting jobs will involve tasks such as: keeping records of day-to-day business transactions; making entries in account ledgers; monitoring cash receipts and disbursements; processing appropriate budgetary costing procedures; and preparing materials needed for financial reports. As you gain experience, you may assume more accounting responsibilities which could involve analyzing financial reports and advising management.

		Suggested Sequence	Sem Hrs
General Education Courses			
LW --- Lifelong Wellness Elective	■ ■ ■ ■		1
LW --- Lifelong Wellness Elective	■ ■ ■ ■		1
POL 103 Introduction to American Government	■ ■ ■ ■		3
PSY 101 Applied Psychology OR			
SPH 112 Fundamentals of Oral Communication OR			
SPH 114 Interpersonal Communications	■ ■ ■ ■		3
--- --- General Electives	■ ■ ■ ■		5/6
SUBTOTAL			13/14

Business Courses

* ACC 211	Principles of Accounting I	■	□	□	□	4
* ACC 212	Principles of Accounting II	□	■	□	□	4
* ACC 214	Microcomputer Accounting Applications	□	■	□	□	4
* ACC 215	Federal Tax Accounting OR					
ACC 115	Applied Tax - H & R Block	□	□	■	■	3/5
* ACC 223	Accounting Practices/Working Capital	□	□	■	■	4
* ACC 224	Accounting Practices/Long Term	□	□	■	■	4
* ACC 233	Cost Accounting	□	□	■	■	3
* CIS 133	Introduction to Computer Information Systems	■	□	□	□	4
ECN 221	Principles of Economics I	□	■	■	■	4
GB 153	Introduction to Business	■	■	□	□	3
GB 251	Business Law I	□	■	■	■	3
* OSE 151	Business Communications I	■	□	□	□	3
* OSE 152	Business Communications II	□	■	□	□	3
OSE 170	Keyboarding	■	□	□	□	2
SUBTOTAL						48/50

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. ACC 211 prerequisite: one year of high school algebra or MTH 107. May be taken concurrently.
- 2. Proficiency examinations are available for OSE 170. Typewriting may be waived and another course substituted.
- 3. If you are planning to transfer to Northwood University you should select ACC 227 and ACC 228, instead of Acc 223 and 224. Northwood does not accept ACC 115.
- 4. The above program is primarily intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college, you should use a Business Administration program guidesheet and consult a counselor.
- 5. See page 94 for graduation requirements.
- 6. Delta College reserves the right to modify program requirements.
- 7. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

APPLIED SACRED MUSIC

Certificate Program

This program is being phased out. If you are currently enrolled in this program, considering entering this program, or would like to explore options, please see a Humanities counselor.

This program provides you the opportunity to learn fundamental musical skills that you will need as a church musician. If you are an organist, choir director, cantor, or guitarist, the 30-credit program will enable you to learn new skills and improve on the skills you already have. The program's flexibility allows for granting some life-experience credit. Credits earned are applicable towards an Associates degree and are transferable to other institutions. The program focuses on practical skills and resources and is non-denominational.

		Suggested Sequence	Sem Hrs
Music Courses			
MUS 100 Elements of Music	■ □ □ □		3
MUS 101 Music Theory	□ □ ■ □		5
MUS 102 Music Theory	□ □ □ ■		5
MUS 117 Music Liturgy	□ ■ □ □		1
MUS 131 Piano I	■ □ □ □		2
MUS 132 Piano II OR			
MUS 139 Keyboard Practicum	□ ■ □ □		2
MUS 138 Music Voice Class	□ ■ □ □		2
MUS 145 Elements of Conducting	□ □ ■ □		2
MUS 289 ASM Capstone	□ □ □ ■		2
MUS --- Applied Music Courses	■ ■ ■ ■		4
# MUS --- Ensemble I	■ □ □ □		1
# MUS --- Ensemble II	□ ■ □ □		1
TOTAL CREDITS REQUIRED FOR CERTIFICATE			30

Choose From:

MUS 154 Choir I	1	MUS 255 Choir IV	1
MUS 155 Choir II	1	MUS 256 Jazz Choir III	1
MUS 156 Jazz Choir I	1	MUS 257 Jazz Choir IV	1
MUS 157 Jazz Choir II	1	MUS150 Ensemble Experience	
MUS 254 Choir III	1		

If you have tested out or received waiver for any of the music courses required you may take classes from those listed below:

CPS 125 Computer Literacy	3	RUS 111 Russian One	4
FR 111 French One	4	SOC 271 Religion and Society	3
GE 111 German One	4	SPA 111 Spanish One	4
MUS111 Music Appreciation I	3	SPH 112 Fund. of Oral Comm.	3
MUS 140 Intro to MIDI	3	SPH 114 Interpersonal Comm.	3
MUS --- Applied Music Courses		SPH 160 Public Scripture Reading	1

Notations:

1. "Test out" option is available for MUS 100 and MUS 131.
2. Applied Music courses will be selected in consultation with a member of the Music Department.
3. Both Delta Ensemble and others may be used with prior permission from a member of the Music Department.
4. MUS 289 is the final class in this program and will require your work to be "judged".
5. See page 94 for graduation requirements.
6. Delta College reserves the right to modify program requirements.

ARCHITECTURAL TECHNOLOGY

Associate in Applied Science Degree

As an Architectural Technician, you may assist licensed architects, construction engineers, urban planners and other design personnel in most phases of the development of a building or site projects. This program has an emphasis on job entry skill development for employment in occupations such as: draftsman for installation and shop drawings; building appraiser for financial institutions or real estate firms; estimator or supervisor for contractors; inspector for government agencies.

		Suggested Sequence	Sem Hrs
General Education Courses			
ART 111	Drawing I	■ □ □ □	3
ART 251	History of Architecture OR		
ART 252	History of American Architecture	□ ■ □ □	2
ENG 111	College Composition I	■ □ □ □	3
ENG 112	College Composition II OR		
ENG 113	Technical Writing	□ ■ □ □	3
MTH ---	Mathematics Elective	■ ■ □ □	3/4
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
---	Approved Electives (see list below)	■ ■ ■ ■	3/4
SUBTOTAL			22/24

Basic Program Requirements

+ ARC 101	Materials & Methods of Construction OR		
RC 102	Building Materials	■ □ □ □	3
+ ARC 105	Architectural Drafting I OR		
RC 109	Residential Drafting	■ □ □ □	4
+ ARC 106	Architectural Drafting III	□ ■ □ □	3
ARC 114	Architectural AutoCAD 2D Basics	■ □ □ □	2
+ ARC 214	Architectural AutoCAD 3D Basics	□ ■ □ □	3
ARC 111	Mechanical and Electrical Equipment for Buildings OR		
RC 206	Plumbing, Heating & Electrical Equipment	■ ■ □ □	3
ARC 204	Estimating Building Construction OR		
RC 202	Building Materials Estimation	□ ■ □ □	3
ARC 205	Architectural Drafting II	□ □ ■ □	3
ARC 206	Architectural Drafting IV	□ □ □ ■	3
ARC 207	Architectural Presentation Drawing	□ □ ■ ■	3
+ ARC 211	Elements of Structural Design OR		
RC 211	Elements of Structural Design	□ □ ■ ■	3
+ ARC 221	Site Preparation OR		
RC 105	Building Site Surveying	□ □ ■ ■	3
RC 101	Construction Print Interpretation	■ □ □ □	3
SUBTOTAL			39
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			66/68

Approved Electives:

ARC 140	Intro. to Landscape Architecture	GB 131	Small Business Management
ARC 200	Spatial Analysis & Presentation	GB 145	Principles of Sales
ARC 212	Theory & Practice of Structural Steel Design	GB 153	Introduction to Business
ARC 231	Concrete Fundamentals	GB 251	Business Law I
ARC 254	Earth Sheltered Housing Design	MTH 111	Applied Algebra
ART 112	Drawing II	MTH 113	Applied Trigonometry
ART 115	Basic Design - Two Dimensional	MTH 119	Intermediate Algebra
ART 116	Basic Design - Three Dimensional	MTH ---	Any Math Course 120 or higher
CIS ---	Any Computer Info System Course	PHO ---	Any Course in Photography
CPS ---	Any Computer Science Course	RC ---	Any Residential Construction Course that is not co-listed

NOTATIONS:

1. Courses ARC 105, 106, 205 and 206 must be taken in sequential order. For information about day and/or evening availability of courses, contact a technical career counselor.
2. This program prepares you for a technical level career, but some courses are transferable to baccalaureate degree programs in Architecture. If you want to become an architect, you are advised to consult with a counselor about transfer requirements.
3. ART 251 or 252 is offered only in the Winter Semester.
4. See page 94 for graduation requirements.
5. Delta College reserves the right to modify program requirements.
6. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

AUTOMOTIVE SERVICE EDUCATIONAL PROGRAM

Associate in Applied Science Degree

The Automotive Service Educational Program (ASEP) is an associate degree automotive program designed to upgrade your technical competence and professional level as an incoming dealership technician. At Delta College, the program requires 103 weeks of training to complete, with 48 weeks spent on the Delta College campus and 55 weeks in a General Motors dealership. Each specialized subject is dealt with in the classroom and laboratory on campus and is immediately followed by related work experience in the dealership. This rotation system continues until the program is completed.

First Semester

SPH 114	Interpersonal Communications	3
LW ---	Lifelong Wellness Elective	1
AGM 122	Chassis Service	12
1. AGM 123	Chassis Dealership Work Experience	1
SUBTOTAL		17

Second Semester

2. ENG 101	Applied English Skills	5
CIS 108	GM Information Systems	2
AGM 124	Engine and Emission Control Service	12
1. AGM 125	Engine Dealership Work Experience	1
SUBTOTAL		20

Third Semester

LW ---	Lifelong Wellness Elective	1
POL 103	Intro to American Government	3
AGM 222	Drivetrain Service	12
1. AGM 223	Drivetrain Work Experience	1
SUBTOTAL		17

Fourth Semester

WELD 101	Fuel Gas Weld Cutting	1
AGM 224	Electrical/Electronics/Air Conditioning Service	12
1. AGM 225	Electrical/Electronics/Air Conditioning Work Experience	1
SUBTOTAL		14
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		68

NOTATIONS:

1. These courses are taught at a dealership and are not on campus.
2. ENG 111 and 112 or 113 may be substituted for ENG 101.
3. Since half of the program is spent at the dealership, you are required to have a sponsoring General Motors dealer. The main responsibility of the dealership is to provide employment during all of the work experience periods.
4. All tuition, fees, housing (if needed), textbook costs, and tools are your responsibility.
5. Contact person: The ASEP Coordinator at (517) 754-6558.
6. See page 94 for graduation requirements.
7. Delta College reserves the right to modify program requirements.
8. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Associate in Applied Science Degree/Certificate

In addition to being trained to enter the automotive field as a technician or service writer, you will have a broader based education by completing the Associate degree. You may also choose to continue your education by seeking a Baccalaureate degree.

Both certificate and Associate degree is available. For those interested in specific segments of an automotive course, short term courses are available and are identified by the core course number and followed by the letter A, B, C, etc.

Automotive Service Courses

Introductory Automotive

*AUT 100	Introduction to Automotive Service	■ □ □ □	3
*AUT 108	Automotive Electronics	■ □ □ □	3
SUBTOTAL			6

1st Automotive Cluster

AUT 110	Auto Electronics I OR	□ ■ ■ ■	4
AUT 110A	Automotive Battery Service and		1
AUT 110B	Automotive Starting System and		1
AUT 110C	Auto Charging System and		1
AUT 110D	Auto Wiring Diag.		1
AUT 112	Engine Service	□ ■ ■ ■	6
AUT 114	Brake System Service OR	□ ■ ■ ■	5
AUT 114A	Drum Brakes and		1.5
AUT 114B	Disc Brakes and		1.5
AUT 114C	Hydraulic/Pwr Assist and		1
AUT 114D	Anti-Lock Brakes		1
SUBTOTAL			15

2nd Automotive Cluster

AUT 120	Driveline Service OR	□ ■ ■ ■	6
AUT 120A	Clutch Service and		.8
AUT 120B	Manual Tran/Transaxle and		1.5
AUT 120C	Rear Axle/Diff. Ser. and		2.0
AUT 120D	Front Wheel/4 Wheel Drive		1.7
AUT 122	Auto Transmission Service	□ ■ ■ ■	8
SUBTOTAL			14

3rd Automotive Cluster

AUT 210	Auto Electronics II OR	□ ■ ■ ■	3
AUT 210A	Airbags/Columns and		.6
AUT 210B	Power locks/Windows and		.6
AUT 210C	Instruments/Lighting and		.6
AUT 210D	Cruise Control and		.6
AUT 210E	Wiper Systems		.6
AUT 212	Suspension System Service OR	□ ■ ■ ■	7
AUT 212A	Frame Linkage/Manual Gears and		2
AUT 212B	Suspension Systems/Alignment and		4
AUT 212C	Power Steering/Electronics		1
AUT 214	Heating/Air Cond. Service OR	□ ■ ■ ■	5
AUT 214A	Heating/Cooling System and		2
AUT 214B	Auto Air Cond. Service		3
SUBTOTAL			15

4th Automotive Cluster

AUT 220	Electronic Systems Service	□ ■ ■ ■	2
AUT 222	Fuel System Service OR	□ ■ ■ ■	6
AUT 222A	Carb/Throttle Body Service and		1
AUT 222B	Carb Fuel System Service and		1.5
AUT 222C	Fuel Injection Supply Service and		1.5
AUT 222D	Carb Fuel Delivery Service and		1
AUT 222E	TBI/PFI Fuel Delivery Service		1.5

AUT 224	Engine Performance Service OR	□ ■ ■ ■	6
AUT 224A	Ignition Principles and		1.5
AUT 224B	Eng. Per. Test Equipment and		1.5
AUT 224C	Chry. Eng. Perf. Ser. and		1
AUT 224D	GM Eng. Perf. Ser. and		1
AUT 224E	Ford Eng. Perf. Ser.		1
SUBTOTAL			14

Service Internship

1. AUT 260	Auto Service Skills	□ □ ■ ■	1
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General Education Courses

CIS 114	Computer Fundamentals/IBM	■ ■ ■ ■	1
GB 110	Business Math OR		
MTH ---	Algebra I or higher	■ □ □ □	3
ENG 111	College Composition I	■ ■ □ □	3
ENG 113	Technical Writing	■ ■ ■ ■	3
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
PSY 101	Applied Psychology OR		
PSY 211	General Psychology	■ ■ ■ ■	3/4
ENV 130	Environmental Management for		
	Automotive Industries	□ ■ ■ □	1
SUBTOTAL			19/20

Certificate Requirements

*AUT 100	Introduction to Automotive Service		3
*AUT 108	Introduction to Automotive Electronics		3
AUT ---	Courses above AUT 100 & 108		24
1. AUT 260	Automotive Service Skills		1
ENV 130	Environmental Management for		
	Automotive Industries		1
MINIMUM CREDITS REQUIRED FOR CERTIFICATE			32

Minimum Certificate requirements include completion of two clusters. You are, however, encouraged to complete more than two clusters.

Associate Degree Requirements

*AUT100	Introduction to Automotive Service		3
*AUT108	Introduction to Automotive Electronics		3
AUT ---	Courses above AUT 100 & 108		39
1. AUT260	Automotive Service Skills		1
General Education Courses			19/20
MINIMUM CREDITS REQUIRED FOR ASSOCIATE DEGREE			65/66

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course prior to enrolling in any other automotive course.

- The selection of an Automotive Service Skills internship is done after consulting with the automotive faculty.
- The minimum Associate degree requirements include completion of three clusters. You are encouraged to complete all four automotive clusters.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Associate in Applied Science/Certificate

You will obtain the knowledge, skill and a portion of the aeronautical experience* necessary to meet the requirements for a Commercial Pilot Certificate (airplane category) and Instrument Rating. You will be prepared to transfer to a baccalaureate institution with degree programs for professional pilots.

*You must arrange and pay for additional aeronautical experience (flight hours) to meet Federal Aviation Regulations, Part 61, requirements for Commercial Pilot.

	Suggested Sequence	Sem Hrs
General Education Courses		
CPS 125 Computer Literacy	■ ■ ■ ■	3
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing	□ ■ ■ ■	3
GEO 111 Physical Geography	■ ■ ■ □	4
MTH 119 Intermediate Algebra	■ ■ ■ ■	4
LW - Lifelong Wellness Elective	■ ■ ■ ■	1
LW - Lifelong Wellness Elective	■ ■ ■ ■	1
POL 111 American Government and Politics	■ ■ ■ ■	4
SPH 114 Interpersonal Communications	■ ■ ■ ■	3
PSY 211 General Psychology	■ ■ ■ ■	4
# - - Humanities Electives	■ ■ ■ ■	5
SUBTOTAL		35

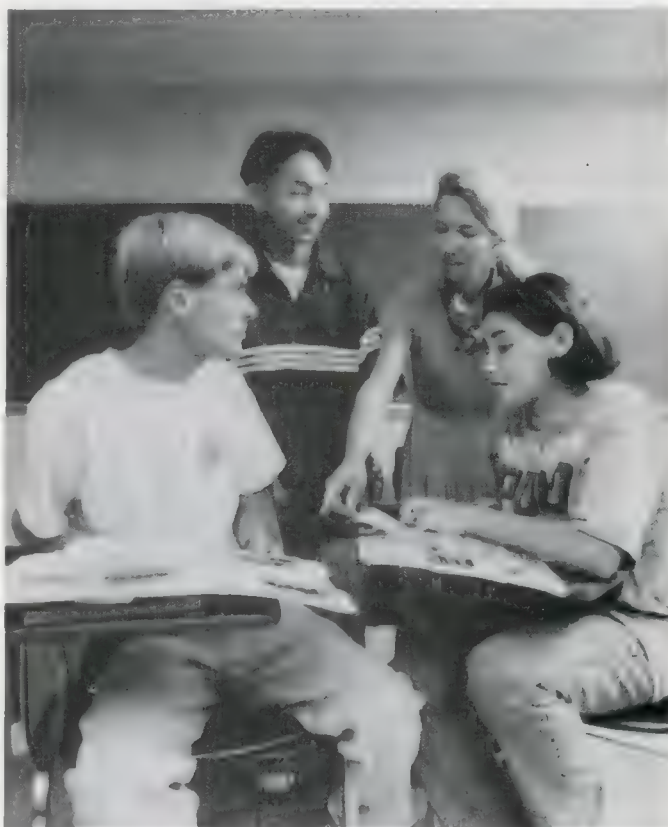
Basic Program Requirements		
>* AFT 101 Private Pilot Ground Training	■ □ □ □	4
>* AFT 105 Primary Pilot Flight Train I	■ □ □ □	2
>* AFT 106 Primary Pilot Flight Train II	■ ■ □ □	3
>* AFT 201 Instrument Pilot Ground Train	□ □ □ ■	4
>* AFT 202 Aviation Meteorology	□ □ □ ■	1
>* AFT 210 Commercial Pilot Ground Train	□ □ ■ ■	4
>* AFT 215 Adv. Pilot Flight Training I	□ ■ ■ ■	2
>* AFT 216 Adv. Pilot Flight Training II	□ ■ ■ ■	3
>* AFT 217 Adv. Pilot Flight Training III	□ □ ■ ■	2
>* AFT 218 Adv. Pilot Flight Training IV	□ □ ■ ■	3
>* GEO 103 Introduction to Meteorology	■ ■ □ □	3
SUBTOTAL		31

Recommended Electives		
CHM 101 General Chemistry I		5
MTH 160 Calculus for the Social and Managerial Sciences		4
PHY 101 Applied Physics OR		
PHY 111 General Physics I		4
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		66
TOTAL CREDITS REQUIRED FOR CERTIFICATE		31

> **Certificate Option:** A Certificate will be awarded when courses preceded by a greater than (>) sign are successfully completed. There are additional hours of aeronautical experience (flying hours) required to meet Federal Aviation Regulations, part 61, to qualify for the examination for a Commercial Pilot Certificate (airplane category) and an Instrument Rating.

NOTATIONS:

- # Check transfer school requirements in the selection of the five hours Humanities' Requirement.
- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. This Program meets MACRAO requirements of 6 English, 8 Science, 8 Social Science and 8 Humanities credits.
- 2. Permission of Coordinator and meeting Federal Aviation Administration criteria are required prior to enrolling in any of the following courses: AFT 105, AFT 106, AFT 215, AFT 216, AFT 217, and AFT 218.
- 3. The following flight courses have special fees for flight instructor and airplane rental that will be paid by the student: AFT 105, 106, 215, 216, 217, and AFT 218.
- 4. See page 94 for graduation requirements.
- 5. Delta College reserves the right to modify program requirements.
- 6. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



OPTIONS: TELEVISION RADIO

Associate in Applied Science Degree

Delta College owns and operates public television stations WDCQ-TV Channel 19 and WDCP-TV Channel 35, both affiliated with national and regional educational networks. Delta College also operates, in conjunction with Central Michigan University, public radio station WUCX-FM 90.1, affiliated with national public radio program networks. In addition to these broadcast facilities, Delta College operates a student television production studio and an audio production studio for both broadcast and student use. These Delta broadcasting facilities provide you with practical experience under laboratory and real-time operating conditions. You will learn to operate sound, recording, and transmitting equipment; become involved in production activities; be exposed to program producing, directing, and performance; and learn principles and techniques of many specialty areas in the fields of broadcasting and telecommunications. The Broadcasting and Telecommunications program prepares you with the fundamental information and experience necessary for entry-level positions in communication and information industries.

You must complete all required courses and select four courses in one of the career tracks. Discussion regarding the best order for you to schedule the courses with the Broadcasting and Telecommunications counselor is recommended. Check your course descriptions for prerequisite courses.

	Suggested Sequence	Sem Hrs
General Education Courses		
ECN 221 Principles of Economics I	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	4
ENG 111 College Composition I	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
ENG 112 College Composition II	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
GB 153 Introduction to Business	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
LW --- Lifelong Wellness Elective	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1
LW --- Lifelong Wellness Elective	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1
POL 103 Introduction to American Government	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
SPH 112 Fundamentals of Oral Communication	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
SUBTOTAL		21

Broadcast and Telecommunications Core Courses		
BRT 130 Electronic Media & Society	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 149 Television Studio Operations I	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 150 Broadcast Writing	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 153 Broadcast Performance	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 156 Audio Operations I	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 177 Telecommunications Facilities	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	4
BRT 220 Broadcast History, Law, and Responsibility	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	4
SUBTOTAL		23

General Electives		
(May be selected from BRT or Non-BRT courses)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	6
SUBTOTAL		6

Recommended BRT Elective Courses		
BRT 227 Broadcast Sales	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 260 Assistant Director I	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2
BRT 261 Assistant Director II	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	2
BRT 270 Current Trends and Issues - Seminar	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	2



"I Decided on Delta!"

"Delta College has given me many learning opportunities. Through these experiences I have grown as a person and as a student. Hopefully I will be ready to sell myself in today's job market."

Shawn Hoskey, Broadcasting/TV

CHOOSE ONLY ONE CAREER TRACK: Television or Radio

Television Track		
BRT 154 Television Studio Operations II	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 157 Television Field Production	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 222 Broadcast Journalism	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 251 Television Producing and Directing OR		
BRT 257 Advanced Television Field Production	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
SUBTOTAL		12

Radio Track		
BRT 222 Broadcast Journalism	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 230 Broadcast Audio Production	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 232 Radio News Production	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 234 Music Programming Workshop OR		
BRT 256 Audio Operations II	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
SUBTOTAL		12

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

NOTATIONS:

1. Based on available facilities and equipment, this Program is considered a "limited" enrollment program. Classes will be small and interaction with faculty will provide comprehensive instruction. You are encouraged to see the Broadcasting & Telecommunications Program counselor prior to registration.
2. If you are **PLANNING TO TRANSFER**, you should plan on completing the MACRAO requirements. Please plan on taking the following additional classes: one additional course in Social Science, two additional courses in Humanities, two different courses (at least 8 credits) in Science of which one science must include lab. Please work closely with the Program counselor.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Associate in Applied Science Degree

A degree in Chemical Technology may transfer or could lead to a position with area employers as a Technologist. As a Chemical Technologist, you will operate many kinds of laboratory instruments, be involved with data collection and analysis, and do technical report writing and research projects. This program includes core courses that allow flexibility in choosing a technical focus. Degrees in Water/Wastewater Treatment Technology, Chemistry, Biology, Physics or Engineering may also be pursued using most of the credits from this program.

		Suggested Sequence	Sem Hrs
General Education Courses			
CHM 111	General Inorganic Chemistry I	■ □ □ □	4
CHM 112	General Inorganic Chemistry II	□ ■ □ □	4
CHM 211	Organic Chemistry I	□ □ ■ ■	5
CHM 212	Organic Chemistry II	□ □ □ ■	5
CPS 125	Computer Literacy	■ ■ ■ ■	3
ENG 111	College Composition I	■ □ □ □	3
ENG 112	College Composition II OR		
ENG 113	Technical Writing	□ ■ □ □	3
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
MTH 208	Elementary Statistics	□ ■ ■ □	3
4 PHY 101	Applied Physics OR		
PHY 111	General Physics OR	■ □ □ □	4/5
PHY 211	Physics I	□ □ □ □	
PHY 112	General Physics II OR	□ ■ □ □	
PHY 212	Physics II OR	□ □ □ ■	
BIO 110	Environmental Science OR	■ ■ ■ ■	4/5
BIO 111	Principles of Biology OR	■ ■ ■ ■	
GLG 130	Environmental Geology	■ ■ ■ ■	
POL 103	Introduction to American Government	■ ■ ■ ■	3
1 ---	Humanities Electives	■ ■ ■ ■	8
2 ---	Social Science Elective	■ ■ ■ ■	4/5
SUBTOTAL			55/59

Basic Program Requirements

CHM 230	Chemical Analysis/Instrumentation	□ □ ■ □	4
CT 100	Introduction to Chemical Technology	■ ■ ■ ■	2
3 SCI 250	Research Project in Science	□ □ □ ■	2/6
SUBTOTAL			8/11

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/70

Recommended Electives

CHM 221/222	Organic Biochemistry		3/1
MTH 121	Plane Trigonometry		3
MTH 151	Pre-Calculus		4
MTH 161	Calculus I (and higher)		4
WET 112	Wastewater Treatment		3
WET 212	Water Chemistry II		4
WET 220	Microbiology of Water		4

NOTATIONS:

1. Courses must be completed in at least two different subject areas. Consult page 95 of this catalog for a list of approved Humanities courses. Industry recommends enrollment in SPH 112 and/or SPH 114 and PHL 221.
2. Additional Social Science credits must be earned in an area other than Political Science. See page 95 for a list of approved courses. Industry recommends enrollment in ECN 221 and POL 111 to fulfill the 8 credits required in Social Science.
3. A minimum of 2 credits is required for SCI 250. However, in consultation with faculty, a research project for up to 6 credits may be chosen.
4. May transfer as Physics or Science credit only, depending on the institution.
5. This program fulfills the requirements for the MACRAO agreement. To have the MACRAO stamp placed on your transcript, fill out a MACRAO Request Form at the Records and Registration Office with your Graduation Application.
6. See page 94 for graduation requirements.
7. Delta College reserves the right to modify program requirements.
8. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



CHILD DEVELOPMENT

OPTIONS:

CHILD DEVELOPMENT TEACHER ASSISTANT

Associate in Applied Science Degree/ Certificate

Child care workers work in a variety of settings in the care and guidance of young children. This includes concern for the mental, social, physical, and emotional growth and development of the child. As a child care worker, you should be able to work under supervision and work cooperatively with other personnel. Each child care worker should also gain the respect, confidence, and cooperation of children, maintain discipline and enforce as well as deal with emergency situations calmly. Physically, you must maintain good health and be able to stoop, kneel, crouch, and crawl. Good vision and hearing is necessary as well as being able to lift up to 40 pounds. Applicants for child care worker positions are required to pass a tuberculin test and may have to undergo tests or immunization for other communicable diseases.

As a supplement to the supportive skills learned from courses completed in the Child Development Certificate program, the Associate in Applied Science degree program will also stress leadership skills which are needed in a lead teacher position. In addition to the employment opportunities offered by the certificate program, graduates of this degree program will also be qualified to apply for positions as lead teachers, child care center directors and should be eligible to apply for a license for their own child care agency.

The Teacher Assistant option is designed to give the student specialized skills necessary to become a successful assistant in the classroom. The curriculum is designed specifically to deal with real life school experiences likely to be encountered by a teacher assistant. The student will observe and have field experience which will allow for practical application of the textbook/classroom learning. When in the classroom, you will be under the direction of a certified teacher. As a teacher assistant you may be responsible for: individual or group tutoring of reading or math; assisting in preschool, young fives or kindergarten; assisting the teacher in record keeping; daily activities, preparation, and follow through; and using office and AV equipment; library activities; health care; and supervising playground, lunchroom, hall or bus boarding activities.

General Education Courses

		Suggested Sequence	Sem Hrs
BIO 111	Principles of Biology	■ ■ □ □	4
ENG 111	College Composition I	■ □ □ □	3
ENG 112	College Composition II	□ ■ □ □	3
LW ---	Lifelong Wellness Elective	■ ■ □ □	1
LW ---	Lifelong Wellness Elective	■ ■ □ □	1
POL 103	Introduction to American Government OR		
POL 111	American Government and Politics OR		
POL 212	State and Local Government OR		
HIS 103	History of American Government	■ ■ □ □	3/4
1. ---	Humanities Electives	■ ■ □ □	8
---	Natural Science Electives (other than Biology)	■ ■ □ □	4
2.> ---	Elective	■ ■ ■ ■	6/10
	SUBTOTAL		33/38

Child Development Option: Courses

4> * CD 111	Introduction to Early Childhood Education OR		
CD 111A	Introduction to Early Childhood Education	□ □ ■ □	2
4> * CD 112	Early Childhood Program OR		
CD 112A	Early Childhood Program	□ □ ■ □	2
4> * CD 113	Guidance of Young Children OR		
CD 113A	Guidance of Young Children	□ □ ■ □	3
4> * CD 114	Child Development OR		
CD 114A	Child Development	□ □ ■ □	3

(CONTINUED NEXT COLUMN)

Child Development Option: Courses (continued)

CD 116	Families in American Culture OR		
4> * CD 116A	Families in American Culture	□ □ ■ ■	3
> * CD 117	Practicum for Early Childhood Assistant	□ □ □ ■	6
> * CD 160	Introductory Practicum in Child Development	□ □ □ ■	2
CD 200	Practicum as a Lead Teacher	□ □ □ ■	4
> * PSY223	Child Psychology	□ □ □ ■	3
	SUBTOTAL		28

Teacher Assistant Option: Courses

4> * CD 113A	Interaction with Young Children	□ □ ■ □	3
4> * CD 114A	Child Development	□ □ ■ □	3
4> * CD 116A	Families in American Culture	□ □ ■ ■	3
> * ED 101	Educ. of Exceptional Child	□ □ □ ■	3
> * TA 160	Practicum in Teaching Assistant	□ □ □ ■	3
> * LWT165	Community First Aid	□ □ □ ■	1
> * PSY223	Child Psychology	□ □ □ ■	3
> * TA 111	Introduction to Teacher Assistant Education	□ □ □ ■	3
> * TA 112	Basic Teaching Strategies/Instructional Materials ..	□ □ □ ■	3
	SUBTOTAL		25
	TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62
	TOTAL CREDITS REQUIRED FOR CERTIFICATE		28

> **CERTIFICATE OPTION** - A CERTIFICATE WILL BE AWARDED TO YOU WHEN YOU SUCCESSFULLY COMPLETE COURSES PRECEDED BY THE ">" SIGN.

* A "C" (2.0) minimum grade is required in each asterisked course.

NOTATIONS:

- Suggested Humanities Electives: to include SPH 114, Interpersonal Communications and one chosen from LIT 251, Children's Literature or LIT 253, Books for Pre-School Children.
- Suggested Elective: For the Child Development Option, LWT 175, Advanced First Aid and Emergency Care is highly recommended.
- In the Child Development option: CD 111, 112, 113, 114, and 160 are taken as a block in the Fall Semester only. CD 116, 117, and PSY 223 are taken as a block in the Winter Semester only.
- CD 111A, 112A, 113A, 114A, and 116A are also offered to community child care professionals, and when offered do not need to be taken in blocks, but the prerequisites must be followed.
- In the Child Development option: CD 200, Practicum as a Lead Teacher should be taken after all other Child Development and General Education courses have been completed. CD 200 is offered Spring and Winter only.
- In the Child Development option: If all requirements have been met except CD 200, the student has the option of the Associate of Arts degree in which CD 116 can be counted toward the Social Science requirement.
- A maximum of 25 students will be admitted into the Child Development courses in the Fall Semester ONLY. This is on a "first come-first served" basis as determined by the general registration system.
- A Child Development information session is usually held in August. Once you have been identified as a Child Development student, you will receive a letter from the Coordinator inviting you to this informational session. **It is necessary for all new Child Development students to attend.**
- The Certificate may be expanded upon to earn an Associate in Applied Science degree in either the Child Development or Teacher Assistant option.
- You will be required to submit a health appraisal signed by a licensed physician declaring, to the best of the physician's knowledge, that you are physically capable of performing the duties that are required for the safe care of children. Also, you must submit evidence of freedom from communicable tuberculosis.
- You may be required to sign a document asking whether you have ever been convicted of an offense other than a minor traffic violation and whether you have ever been involved in abuse or neglect of children.
- If you want to transfer to another college to pursue a Baccalaureate degree in pre-school or elementary education, you are advised to consult with a counselor prior to enrollment in this program. Delta College is not responsible for program requirements and student acceptance by transfer colleges. Also, see pages 27-30 for special transfer agreements.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.

CLOTHING SPECIALIST

Associate in Business Studies Degree/ Certificate

The Fashion-Clothing Specialist degree program is designed for you if you have special talent and flair for creating and constructing apparel and are interested in and like working with fabrics and apparel accessories. Upon completing this program, you will be qualified to seek positions such as: buyers or managers of retail fabric departments; tailors within department and specialty stores; instructors with community school clothing departments; sales personnel, consultants or advisors in the fashion and fabrics industry or with manufacturers of fashion accessories.

		Suggested Sequence	Sem Hrs
General Education Courses			
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
PSY 101	Applied Psychology	■ ■ ■ ■	3
SPH 112	Fundamentals of Oral Communication	■ ■ ■ ■	3
---	General Electives	■ ■ ■ ■	8
	SUBTOTAL		19
Business Courses			
CED 122	Cooperative Education	□ □ □ ■	3
>* FM 110	Apparel Construction and Analysis	■ □ □ □	4
>* FM 120	Apparel Tailoring	□ □ □ □	4
> FM 150	History and Dynamics of Fashion	□ □ □ □	3
>* FM 155	Textiles	■ □ □ □	3
> FM 170	Fund Theories of Fashion Design & Merchandising	□ □ □ □	3
>* FM 210	Apparel Pattern Drafting and Design	□ □ □ □	4
>* FM 220	Advanced Apparel Tailoring	□ □ □ ■	4
FM 240	Fashion Coordination	□ □ □ ■	3
GB 110	Business Math	■ ■ □ □	3
GB 145	Sales OR		
GB 247	Principles of Retailing	□ □ □ □	3
* OSE 151	Business Communications I	■ □ □ □	3
OSE 152	Business Communications II	□ □ □ □	3
	SUBTOTAL		43
	TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62
	TOTAL CREDITS REQUIRED FOR CERTIFICATE		30

Suggested Electives

ART 115	Basic Design - 2 Dimensional	■ □ □ □	3
FM 151	Display	□ □ ■ ■	3
FM 250	Seminar in Clothing Fashion	□ □ ■ ■	2
FM 251	Apparel Market Experience	□ □ ■ ■	1
GB 153	Introduction to Business	■ ■ □ □	3
GB 248	Principles of Buying for Resale	□ □ ■ ■	3
> FM 245	Advanced Textiles	□ □ ■ ■	3
> ---	Co-Op or General Electives	□ □ ■ ■	2

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by the ">" sign.

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Electives may be substituted upon demonstration of equivalent skills for course FM 110.
- 2. You are advised to consult with your counselor about elective courses. Course GB 153 Introduction to Business is highly recommended.
- 3. See page 94 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.
- 5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

COMPUTER AIDED DRAFTING

Certificate Program

As a Computer Drafter, you will make detailed manual or computer drawings of products and machinery from sketches and specifications conceived by engineers and designers. The finished drawings are used as working plans for engineering and manufacturing purposes. Depending on experience and level of responsibility, duties may vary from preparing basic drawings to modifying the finished design using computer aided design equipment.

In order to enter this area of work, you should be able to: work within precise limits or standards of accuracy, concentrate for long periods of time, visualize 3-dimensional objects from drawings or pictures, see detail in objects or drawings, and recognize slight differences in shapes and shadings. Computer skills are a requirement.

		Suggested Sequence	Sem Hrs
Technical Courses			
CAD 114	Auto CAD Introduction	■ □ □	2
CAD 214	Auto CAD Effective Techniques	□ ■ □	2
DRF 104	Basic Mechanical Design OR		
DRF 105	Beginning Mechanical Design	■ □ □	4/3
DRF 107	Intermediate Mechanical Design	□ ■ □	3
DRF 128	Geometric Tolerancing	□ ■ □	2
MDA 205	Rapid Prototyping & Tooling	■ ■ ■	.6
MDA 211	Interactive Part Modeling	■ ■ ■	2.4
MFG 111	Manufacturing Processes	■ ■ □	3
MS 113	Machining Processes	■ □ □	2
MT 110	Machine Tool Calculations OR		
MTH 111	Applied Algebra	□ ■ □	4
	TOTAL CREDITS REQUIRED FOR CERTIFICATE		24/25

NOTATIONS:

1. Students wanting to pursue an Associate Degree should consider Mechanical Design Technology.
2. See page 94 for graduation requirements.
3. Delta College reserves the right to modify program requirements.

"Employer's Quote"

*Grant Richards, Human Resources Manager,
Rapid Design Service, Inc.*

"Delta College has proven itself to be a source of quality employees both on the academic level as well as experience level. On a consistent basis Delta students have helped us to meet our workforce demands while providing us with technical skills to compete with job market demands."

COMPUTER INFORMATION SYSTEMS

OPTIONS:

ACCOUNTING PROGRAMMING COMPUTER APPLICATION SPECIALIST

Associate in Business Studies Degree/ Certificate

Computers can process masses of information rapidly and accurately. A programmer prepares detailed instruction (a program) using special computer language to direct the computer through the steps needed to complete an operation. A computer specialist with accounting skills will be able to understand the accounting language and computerize the data to produce special accounting reports and functions. Delta College offers three Computer Information Systems degree options: Programming; Computer Applications Specialist; Accounting. You must complete all "Basic Core Program" courses plus courses listed in one of the three options.

	Suggested Sequence	Sem Hrs
General Education Courses (all options)		
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
--- --- Humanities OR Social Science elective		
Those below are highly recommended:		3/4
GEO 111 Physical Geography	■ ■ ■ ■	
PHL 221 Logic	□ □ ■ ■	
PSY 101 Applied Psychology OR		
PSY 211 General Psychology	■ ■ ■ ■	
SPH 112 Fundamentals of Oral Communication	■ ■ ■ ■	
SPH 114 Interpersonal Communications	■ ■ ■ ■	
SPH 212 Listening	■ ■ ■ ■	
SUBTOTAL		8/9

Business Program Requirements (all options)		
> * ACC 211 Principles of Accounting I	■ □ □ □	4
* ACC 212 Principles of Accounting II	□ ■ □ □	4
> CIS 112 Introduction to AS400 and Profs	■ ■ □ □	1
> CIS 118 Windows Operating Systems	■ ■ □ □	2
CIS 130 Developing Programming Logic	□ ■ □ □	2
> * CIS 133 Introduction to Computer Information System	■ □ □ □	4
> CIS 134 Lotus 1-2-3 OR		
CIS 136 Microsoft Excel	□ ■ □ □	3
CIS 135 Information Storage & Retrieval	□ ■ □ □	3
CIS --- Select from CIS 139 and CIS 140, or CIS 170		
> * CIS 139 QBASIC Programming I AND		
1. * CIS 140 QBASIC Programming II OR	■ ■ □ □	
* CIS 170 Introduction to C++ Programming	■ ■ □ □	3
* CIS 160 Introduction to the Internet	■ ■ □ □	2
> * CIS 260 Database	□ ■ ■ ■	3
4. > * OSE 151 Business Communications I	■ □ □ □	3
OSE 152 Business Communications II	□ ■ □ □	3
2. OSE 170 Keyboarding	■ □ □ □	2
SUBTOTAL		39

OPTION -- Accounting

ACC 214 Microcomputer Accounting		
Applications (concurrently with ACC 212)	□ ■ □ □	4
* ACC 223 Accounting Practices/Working Capital	□ □ ■ ■	4
* ACC 224 Accounting Practices/Long Term	□ □ ■ ■	4
3. MTH 208 Elementary Statistics	□ □ ■ ■	3
--- --- Elective	■ ■ ■ ■	3
SUBTOTAL		18

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 65/66

OPTION -- Programming

CIS 170 Introduction to C++ Programming	□ □ ■ ■	3
CIS 240 Windows Programming Using Visual BASIC	□ □ ■ ■	3
CIS 235 Systems Analysis & Design	□ □ □ ■	3
* CIS 245 COBOL Programming OR		
* CIS 243 Report Program Generator Programming	□ □ ■ □	3
CIS 253 Advanced RPG OR		
CIS 255 Advanced COBOL OR		
CIS 241 Advanced Visual Basic OR		
CIS 266 C++ Object-Oriented Programming	□ ■ ■ ■	2/3
MTH- - Math Elective	□ ■ ■ ■	3
SUBTOTAL		17/18

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 64/66

OPTION -- Computer Application Specialist

> CIS 120 Microcomputers in Business using MS Office	□ ■ ■ □	3
CIS 201 Power Point	□ ■ ■ ■	2
CIS 216 Local Area Networks	□ ■ ■ ■	4
Select electives from below:		
GB 110 Business Math	■ ■ ■ ■	
GB 131 Small Business Management I	□ ■ ■ □	
GB 132 Small Business Management II	□ □ ■ ■	
GB 143 Principles of Advertising	□ ■ ■ ■	
> GB 153 Introduction to Business	■ ■ ■ ■	
MTH --- Elective (maximum of 3 MTH credits)	■ ■ ■ ■	
--- --- Elective (maximum of 1 general elective credit)	■ ■ ■ ■	
SUBTOTAL		15

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

CERTIFICATE OPTION ONLY (COMPUTER APPLICATION SPECIALIST)

> CIS 119 Micro Hardware Install	□ □ ■ □	1
> OSE 181 Microsoft Word OR		
> OSE 191 WordPerfect for Windows	□ ■ □ □	3
> CIS 216 Local Area Networks	□ □ ■ □	4
SUBTOTAL		8
TOTAL CREDITS REQUIRED/CERTIFICATE		37

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- > Computer Application Specialist Certificate Option only. A certificate will be awarded to you when you successfully complete these courses.
- 1. Take CIS 139 before CIS 140, if you do not have a solid knowledge of BASIC.
- 2. Proficiency in typing OSE 170 is required for all CIS classes; however, it may be waived by successfully passing a keyboarding test. See counselor.
- 3. Additional Algebra prerequisites may be required depending on your background.
- 4. You may substitute ENG 111 and ENG 112 for OSE 151 and 152.
- 5. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
- 6. See page 94 for graduation requirements.
- 7. Delta College reserves the right to modify program requirements.
- 8. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Associate in Business Studies Degree/Certificate

This program provides education in the computer business field, with an emphasis on computer marketing. Basic business knowledge and computer skills training are necessary if you are interested in distributing or marketing computers, hardware and software.

		Suggested Sequence	Sem Hrs
General Education Courses			
ECN 221	Principles of Economics I	<input type="checkbox"/> ■ ■ ■ ■	4
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
	SUBTOTAL		9

Business Courses

* ACC 111	Introductory Accounting OR		
*+ ACC 211	Principles of Accounting I	■ ■ ■ ■	4
CED 127	Co-Op I: Retail/Computer	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ■	3
> CIS 115	Introduction to Macintosh/Business Applications	■ ■ ■ ■	2
> CIS 118	IBM PC DOS and Windows	■ ■ ■ ■	2
> CIS 120	Microcomputers in Business	■ ■ ■ ■	3
> CIS 132	Spreadsheet Fundamentals	■ ■ ■ ■	2
* > CIS 133	Introduction to Computer Information Systems	■ ■ ■ ■	4
* > GB 110	Business Math	■ ■ ■ ■	3
> GB 145	Principles of Sales	■ ■ ■ ■	3
> GB 153	Introduction to Business	■ ■ ■ ■	3
GB 243	Principles of Marketing	<input type="checkbox"/> ■ ■ ■ ■	3
* GB 245	Principles of Management	<input type="checkbox"/> ■ ■ ■ ■	3
> GB 251	Business Law I	<input type="checkbox"/> ■ ■ ■ ■	3
GB 274	Computer-Aided Decisions	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ■	2
* > OSE 151	Business Communications I	■ ■ ■ ■	3
* OSE 152	Business Communications II	<input type="checkbox"/> ■ ■ ■ ■	3
> OSE 187	Beginning Word Perfect	■ ■ ■ ■	1
> OSE 194	Microsoft Windows	<input type="checkbox"/> ■ ■ ■ ■	1
-----	General Electives	■ ■ ■ ■	5
	TOTAL		53

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

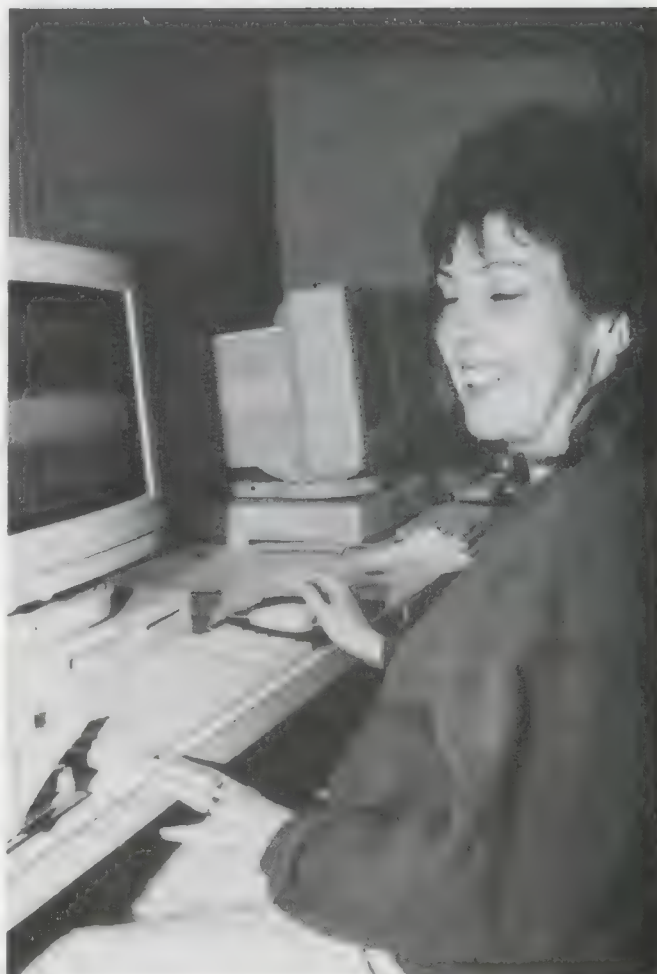
TOTAL CREDITS REQUIRED FOR CERTIFICATE 30

>**CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">". (30 Sem. Hrs.).

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. + If planning to transfer to a four-year institution (example: Northwood University 3+1 program), ACC 211 and other prerequisite courses may be required.
2. See page 94 for graduation requirements.
3. Delta College reserves the right to modify program requirements.
4. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



"Decided on Delta!"

"This was my first chance to study abroad. Delta will give me a chance to educate myself and help others less fortunate."

*Adela Radosa, Major, Marketing Management/Minor,
International Business*

Associate in Applied Science Degree/Certificate

As a CNC Machine Tool Programmer/Operator, you will use computer driven machine tools such as lathes, mills, profilers, lasers, water jet, wire electrical discharge machines, tube benders, punches, and grinders to shape metals to precise dimension. Although some programmer/operators can work with a wide variety of CNC machine tools, most specialize in one or two types. Specific duties may include: studying blueprints, sketches; tool, fixture and machine set up; programming and editing; machine workpieces; inspecting, verifying, and certifying product for dimensional accuracy; light duty repair and maintenance of the CNC machine.

General Education Courses

		Suggested Sequence	Sem Hrs
ENG 111	College Composition I	■ ■ ■ ■	3
ENG 113	Technical Writing	■ ■ ■ ■	3
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
PSY 101	Applied Psychology OR		
SPH 114	Interpersonal Communications OR		
SPH 112	Fundamentals of Oral Communications	■ ■ ■ ■	3
	SUBTOTAL		14

Basic Program Requirements

>CAD 114	Autocad Introduction	■ ■ ■ ■	2
>CIS 114	Computer Fundamentals/IBM OR		
CIS 118	Windows Operating System	■ ■ ■ ■	1
>CNC 160	Computer Numerical Control Programming I	■ ■ ■ ■	3
>CNC 161	Computer Numerical Control Programming II	■ ■ ■ ■	3
>CNC 201	CNC Tooling and Special Setups	■ ■ ■ ■	2
CNC 284	CNC Practicum	■ ■ ■ ■	4
>DRF 104	Basic Mechanical Design OR		
DRF 105	Beginning Mechanical Design	■ ■ ■ ■	3/4
>MS 103	Machine Shop III	■ ■ ■ ■	4
>MS 104	Machine Shop IV	■ ■ ■ ■	4
>MS 112	Ferrous Heat Treatment	■ ■ ■ ■	2
>MS 120	Machinist's Handbook	■ ■ ■ ■	2
>MT 110	Machine Tool Calculations	■ ■ ■ ■	4
	SUBTOTAL		34/35

If you are an Associate degree candidate, you must select six courses from the CNC Core. (Four must be from the **On-Line Group** and one must be from the **Off-Line Group**.) 24

> If you are a Certificate candidate, you must select four courses from the CNC Core. (Three must be from the **On-Line Group**.) 16

On-Line Programming/Operation

	Beginning	Advanced	
CNC 211	CNC 251 Mitsubishi 410 EIA/ISO	■ ■ ■ ■	4
CNC 212	CNC 252 Heidenhain TNC-151	■ ■ ■ ■	4
CNC 213	CNC 253 OSP-5000 LG Control	■ ■ ■ ■	4
CNC 214	CNC 254 Anilam G EIA/ISO Control	■ ■ ■ ■	4
CNC 215	CNC 255 General Numeric 10TF Control	■ ■ ■ ■	4
CNC 216	CNC 256 Mazatrol M-2 Control	■ ■ ■ ■	4
CNC 217	CNC 257 JAPT 3J EIA/ISO Control	■ ■ ■ ■	4
CNC 218	CNC 258 Boston Digital SPC-II EIA/ISO	■ ■ ■ ■	4

Off-Line Programming

	Beginning	Advanced	
CNC 221	CNC 261 SURFCAM	■ ■ ■ ■	4
CNC 222	CNC 262 E-Z CAM IV	■ ■ ■ ■	4
CNC 223	CNC 263 TM-APT-G	■ ■ ■ ■	4
CNC 224	CNC 264 Anicam	■ ■ ■ ■	4
CNC 225	CNC 265 Mastercam	■ ■ ■ ■	4
CNC 226	CNC 266 CAM M-2	■ ■ ■ ■	4
CNC 267	XL/NC	■ ■ ■ ■	4
CNC 228	CNC 268 Nicam IV	■ ■ ■ ■	4
CNC 229	CNC 269 Expedite 3D	■ ■ ■ ■	4
CNC 230	ACU. CARV	■ ■ ■ ■	4

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 72/73

TOTAL CREDITS REQUIRED FOR CERTIFICATE 47/48

Technical Electives Suggested for Enrichment

IS 110	Industrial Supervision	3
MT 220	Introduction to Fluid Power	3

>**CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">" (47/48 Sem. Hrs.).

NOTATIONS:

1. A waiting list is maintained for CNC core courses. For program details and to be put on the waiting list, see a counselor or instructor.
2. See page 94 for graduation requirements.
3. Delta College reserves the right to modify program requirements.
4. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

"I Decided on Delta!"

"I've never had a professor that I haven't liked. That hasn't been a big help. They always go out of their way to help you and make sure that they answer any questions that I might have. They make you feel comfortable."

Rebecca Ruppall

CONSTRUCTION MANAGEMENT

Associate in Applied Science Degree

The Construction Management program is designed to acquaint you with management/business operations and knowledge of the practices and procedures relating to the construction industry. The construction course will acquaint you with various materials, procedures, types of fabrication, and methods of resolution. Technical problem solving will be stressed.

The business components of this program will teach you basic business structure and practices. Such training is invaluable in the start-up and maintenance of a profitable construction business. Other avenues of employment can be sought in construction supervision, material representation, and material management and control.

	Suggested Sequence	Sem Hrs
General Education Courses		
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
SPH 202 Oral Communications for Managers	■ ■ ■ ■	3
SUBTOTAL		8

Business Management Courses		
ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting	■ ■ ■ ■	4
CIS 120 MicroComputers in Business OR		
CIS 133 Introduction to Computer Information Systems	■ ■ ■ □	3/4
*GB 131 Small Business Management I	■ ■ ■ ■	3
GB 153 Introduction to Business	■ ■ ■ □	3
GB 246 Supervision	□ ■ ■ ■	3
GB 251 Business Law I	□ ■ ■ ■	3
OSE 151 Business Communications I	■ □ □ □	3
OSE 152 Business Communications II	□ ■ ■ ■	3
SUBTOTAL		25/26

Construction Management Courses		
RC 101 Construction Print Interpretation	■ □ □ □	3
ARC 101 Materials and Methods of Construction OR		
RC 102 Building Materials	■ □ □ □	3
ARC 221 Site Preparations OR		
RC 105 Building Site Surveying	□ ■ □ □	3
RC 106 Concrete & Foundations	□ ■ □ □	4
RC 108 Construction Safety	□ ■ □ □	2
RC 200 Construction Contracting Rules & Regulations	□ □ ■ □	3
ARC 204 Estimating Building Construction OR		
RC 202 Building Materials Estimation	□ □ ■ □	3
ARC 111 Mechanical and Electrical Systems for Buildings	□ □ □ ■	3
ARC 211 Elements of Structural Design OR		
RC 211 Elements of Structural Design	□ ■ □ □	3
*RC 212 Building System Components	□ □ □ ■	3
SUBTOTAL		30
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		63/64

NOTATIONS:

*A "C" (2.0) minimum grade is required in each asterisked course.

1. As a prerequisite to Residential Construction classes, you must have obtained 19 or better on the numerical skills/math portion of the ASSET test or have completed RC 113.
2. If you are in the 3+1 Northwood University program, see your counselor for your course selection at Delta College during your third year.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



CRIMINAL JUSTICE

OPTIONS: LAW ENFORCEMENT WITH BASIC POLICE TRAINING (B.P.T.) CERTIFICATION TRACK CORRECTIONS LAW ENFORCEMENT

Associate in Applied Science Degree

The Delta College Criminal Justice program is designed to give you specialized knowledge of law enforcement combined with a broad general educational background. The program offers theoretical, practical, and technical instruction designed to meet an ever-increasing demand and continuous upgrading of personnel by law enforcement agencies. As a graduate of this program, depending on the option chosen, you would be prepared to seek employment as a police officer or in many non-officer (civilian) jobs such as: patrol and security guards, investigator for several government affiliated agencies or private investigation, or in corrections.

			Suggested Sequence	Sem Hrs
General Education Core Courses				
1	CPS 125	Computer Literacy OR	■ ■ ■ ■	3/4
	CIS 133	Introduction to Computer Information System		
*	CJ 110	Introduction to Criminal Justice	■ ■ □ □	3
	ENG 111	College Composition I	■ □ □ □	3
	ENG 112	College Composition II	□ ■ □ □	3
1	OSE 170	Keyboarding	■ ■ □ □	2
2	LW 101	Physical Fitness OR		
	LW 105	Womens Fitness OR		
	LW 111	Circuit Training	■ ■ ■ ■	1
	LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
	POL 103	Introduction to American Government	■ ■ ■ ■	3
	PSY 211	General Psychology	□ ■ ■ ■	4
	SOC 211	Principles of Sociology	■ ■ ■ ■	3
	SPH 112	Fundamentals of Oral Communication OR		
	SPH 114	Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL				29/30

Law Enforcement with Basic Police Training (B.P.T.) Option (see Notation 8):

	BIO 111	Principles of Biology	■ ■ ■ □	4
*	CJ 111	Police Administration	□ ■ ■ □	3
*	CJ 112	Police Operations	■ ■ ■ □	3
*	CJ 210	Introduction to Criminal Investigation	□ ■ ■ ■	3
7*	CJ 220	Crime Laboratory Techniques	□ □ ■ ■	3
*	CJ 250	Juvenile Offender	□ ■ ■ □	3
*	CJ 270	Evidence & Criminal Procedures	□ □ ■ □	3
*	CJ 271	Criminal Law	□ □ ■ □	3
9**	CJ 101	Police Recruit Training	■	6
9**	OSE 153	Police Report Writing	■	1
9**	LW 280	Self-Defense/Fitness	■	2
9**	LWT 175	Advanced First Aid/EM Care	■	3
SUBTOTAL				37

Law Enforcement without Basic Police Training Option (see Notation 3):

	BIO 111	Principles of Biology	■ ■ ■ □	4
*	CJ 111	Police Administration	□ ■ ■ □	3
*	CJ 112	Police Operations	■ ■ ■ □	3
*	CJ 210	Introduction to Criminal Investigation	□ ■ ■ ■	3
7*	CJ 220	Crime Laboratory Techniques	□ □ ■ ■	3
*	CJ 250	Juvenile Offender	□ ■ ■ ■	3
*	CJ 270	Evidence & Criminal Procedures	□ □ ■ ■	3
*	CJ 271	Criminal Law	□ □ ■ ■	3
6	---	General Electives	■ ■ ■ ■	6/8
SUBTOTAL				31/33

Corrections Option (see Notation 3):

*	CJ 230	Introduction to Corrections	■ ■ ■ ■	3
*	CJ 232	Client Relations in Corrections	■ ■ ■ ■	3
*	CJ 233	Client Growth & Development	■ ■ ■ □	3
*	CJ 235	Correctional Institutions & Facilities	■ ■ ■ ■	3
4*	CJ 236	Community Based Corrections	□ □ ■ ■	3
*	CJ 238	Legal Issues in Corrections	■ ■ ■ ■	3
	PSY 241	Abnormal Psychology OR		
	CJ 250	Juvenile Offender	□ ■ ■ ■	3
5	SOC 215	Sociology of Minority Groups	□ ■ ■ ■	3
6	---	General Electives	■ ■ ■ ■	7/9
SUBTOTAL				31/33
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE				62

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- ** Grade requirement varies. Contact the Criminal Justice Training Center (G-127).

1. If you can demonstrate proficiency in these areas, you can substitute additional electives.
2. Not required if taking Law Enforcement Basic Police Training (B.P.T.) Option.
3. This Criminal Justice Program does not certify you for employment as a police enforcement officer as it does not incorporate the Basic Police Training (B.P.T.) program.
4. CJ 236 offered in Fall semester only.
5. SOC 215 offered in Winter semester only.
6. Careful selection is necessary if electives are chosen to fulfill the MACRAO. Assistance from a Delta College counselor/academic advisor is recommended. Three courses will be intermittently available which will provide students an additional emphasis in management within the law enforcement and corrections option: CJ 275: Probation and Parole (3 cr.), CJ 276: Issues in C.J. Management (3 cr.), CJ 277: Correctional Administration (3 cr.).

MACRAO Agreement: It is recommended that if you are planning to transfer to a four-year college or university, you complete the MACRAO agreement requirements. The intent of this agreement is to ensure that students who complete the basic two-year requirements (general education requirements) at a signatory public community college will have satisfied the basic two-year requirements of the signatory four-year college. These basic two-year requirements include ENG 111/112 and 8 credits each in humanities, social science and science. For assistance in program planning to incorporate the MACRAO designation on your transcript, you are advised to contact a Delta College counselor.

7. You may substitute a lab science other than Biology for CJ 220. This would be particularly useful for transferring to a 4-year school and helpful in the fulfillment of the MACRAO agreement.
8. The Basic Police Training (B.P.T.) can be taken **only** after all of the other courses included for the degree have been successfully completed.
9. CJ 101; OSE 153; LW 201; LWT 175 are taken concurrently and together make up the Basic Police Training (B.P.T.) Academy. (12 credits). Contact office of Criminal Justice for details (G-127).

LW 280 fulfills the LW requirement for the Associate Degree. A waiver test for OSE 170 can be taken in F42 (Co-op office). If you are in the Basic Police Training (B.P.T.) certification track and have successfully completed the waiver test for OSE 170, you may graduate with 62 credits.

10. See page 94 for graduation requirements.
11. Delta College reserves the right to modify program requirements.
12. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Corrections Officer Academic Program Information

All Michigan State Corrections Officers hired are required to have 15 semester or 23 quarter hour college credits earned through one of the following options:

Option I. Five specific corrections courses as determined by the Correctional Officer's Training Council. Each course must be passed with a minimum of a "C" grade (2.0 GPA on a 4.0 scale). At Delta, these courses are CJ230, CJ232, CJ233, CJ235, CJ238 and are described in Section VI, Course Descriptions.

Option II. Fifteen credits in the following areas: Psychology, Sociology, Corrections, Criminal Justice, Guidance and Counseling, Educational Psychology, Family Relations. **Only the earning of college credit is required** in this option; therefore, the "C" grade minimum is **NOT** required.

Note: Fulfillment of OPTION I provides priority on the Department of Corrections employment list as compared to fulfillment of OPTION II, and employment will **ONLY** become available for qualified candidates who completed OPTION II after all the qualified candidates with OPTION I were considered. Since the need for Corrections Officers tends to fluctuate, it is recommended you contact the State regarding employment opportunities using OPTION II.

Course Offerings: It is anticipated that at least one section of each of the five courses will be offered in either the Fall and Winter Semesters. Spring/Summer Semester offerings will depend on need and instructor availability. The courses are offered in the evening only, with some Saturday offerings.

Upon successful completion of the five courses, you will receive a certificate of completion, and this should not be confused with completing a certificate program at Delta.

CUSTOM TAILORING AND ALTERATIONS

Certificate Program

This program will provide education and skill training in the clothing and fashion merchandising business field if you are seeking employment in tailoring occupations, retail fabric, and fashion merchandising. It is designed as a step-out option for employment or the certificate can be used to complete an Associate in Business Studies -- Clothing Specialist Program or Fashion Merchandising Program.

			Suggested Sequence	Sem Hrs
Technical Courses				
FM 110	Apparel Construction and Analysis	<input checked="" type="checkbox"/> <input type="checkbox"/>		4
FM 120	Apparel Tailoring	<input checked="" type="checkbox"/> <input type="checkbox"/>		4
FM 150	History and Dynamics of Fashion	<input checked="" type="checkbox"/> <input type="checkbox"/>		3
FM 155	Textiles	<input checked="" type="checkbox"/> <input type="checkbox"/>		3
FM 170	Fundamental Theories of Fashion Design & Merchandising	<input type="checkbox"/> <input checked="" type="checkbox"/>		3
FM 210	Apparel Pattern Drafting & Design	<input type="checkbox"/> <input checked="" type="checkbox"/>		4
FM 220	Advanced Apparel Tailoring	<input type="checkbox"/> <input checked="" type="checkbox"/>		3
FM 245	Advanced Textiles	<input type="checkbox"/> <input checked="" type="checkbox"/>		4
---	Co-Op or Elective	<input type="checkbox"/> <input checked="" type="checkbox"/>		2/3
TOTAL CREDITS REQUIRED FOR CERTIFICATE				30/31

NOTATIONS:

1. An Associate degree in Business Studies can be obtained, following the Clothing Specialist Program or Fashion Merchandising Program.
2. See page 94 for graduation requirements.
3. Delta College reserves the right to modify program requirements.



DENTAL ASSISTING

Associate in Applied Science Degree/Certificate

As a graduate of this program, you will be prepared to assist the dentist with treatment procedures at chairside; produce diagnostic aids for interpretation by the dentist; provide oral health instructions for patients; perform laboratory procedures that are required for dental treatment; and perform basic office and record procedures. Upon successfully completing this program, you are eligible to take the certification exam of the American Dental Assistants Association to become a Certified Dental Assistant (CDA) and the Board of Dentistry, Michigan Department of Licensing and Regulation exam to become a Registered Dental Assistant (RDA). This Delta College program is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Post-secondary Accreditation and the U.S. Department of Education.

		Suggested Sequence	Sem Hrs
General Education Courses			
ENG 111	College Composition I	■ ■ ■ ■	3
ENG 112	College Composition II	□ ■ ■ ■	3
OR			
OSE 151	Business Communications I	■ ■ ■ ■	(3)
OSE 152	Business Communications II	□ ■ ■ ■	(3)
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government OR		
POL 111	American Government and Politics	■ ■ ■ ■	3
PSY 101	Applied Psychology OR		
PSY 211	General Psychology	■ ■ ■ ■	3/4
SPH 114	Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL			17/18

Dental Assisting Courses Required: These courses must be taken in the sequence specified.

FALL SEMESTER ONLY

> * BIO 102	Microbiology & Infection Control (7-1/2 weeks)	■ □ □ □	2
> * DA 110	Preclinical Dental Assisting	■ □ □ □	5
> * DA 113	Oral Anatomy & Physiology	■ □ □ □	4
> * DA 114	Dental Materials I (7-1/2 weeks)	■ □ □ □	1
> * DA 117	Dental Health & Nutrition	■ □ □ □	1
> * HSC 140	Basic Medical Emergencies	■ □ □ □	2
SUBTOTAL			15

WINTER SEMESTER ONLY

> * DA 120	Clinical Dental Assisting	□ ■ □ □	6
> * DA 123	Dental Radiology	□ ■ □ □	2
> * DA 123L	Dental Radiology Lab	□ ■ □ □	2
> * DA 125	Dental Materials II	□ ■ □ □	2
> * BIO 101	Anatomy & Physiology	□ ■ □ □	4
SUBTOTAL			16

SPRING SESSION ONLY

> * DA 128	Expanded Dental Functions	□ □ ■ ■	3
> * DA 129	Dental Office Management	□ □ ■ ■	3
SUBTOTAL			6

SPRING SEMESTER ONLY

> * DA 130	Dental Assisting Internship	□ □ □ ■	7
> * DA 133	Dental Assisting Internship Seminar	□ □ □ ■	1
SUBTOTAL			8
TOTAL			45

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

TOTAL CREDITS REQUIRED FOR CERTIFICATE 45

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".



NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. Due to the limited capacity of the college dental facilities and the specific requirements of the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs, enrollment is limited. You may complete courses BIO 101, BIO 102, and HSC 140 with a minimum C (2.0) grade in each prior to enrollment in the Dental Assisting Sequential courses.
2. Dental Assisting courses are offered day hours **only** and **must be taken together** in the sequence shown. You must achieve a minimum C (2.0) grade in each Dental Assisting course and in HSC 140, BIO 101, and BIO 102.
3. If you successfully complete ("C"/2.0 grade in both) BIO 131 and 132 prior to enrollment in DA courses, you will be able to waive BIO 101.
4. You will be required to have a negative TB test, physical exam, and a negative Hepatitis B Carrier test. A Hepatitis B vaccination is strongly recommended.
5. In addition to tuition and textbook costs, you must purchase laboratory attire and other infectious disease barriers. Transportation to off-campus facilities may be required, plus travel to internship assignments.
6. You must have valid CPR Certification throughout the third semester of the Dental Assisting Sequential courses.
7. You must achieve a "C" (2.0) or better grade in each DA course to be eligible to continue enrollment in this program.
8. Validation is **not** required for **this** Health program.
9. See page 94 for graduation requirements.
10. Delta College reserves the right to modify program requirements.
11. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

DENTAL HYGIENE

Associate in Applied Science Degree

As a graduate of this program, you will have the knowledge and skills to provide preventive and therapeutic treatments and services prescribed by and under the supervision of the dentist. Specific responsibilities vary, depending on the law of the state where you are employed, but generally include: scaling and root debridement; application of topical fluoride and medicines for the prevention of tooth decay; taking impressions and preparing diagnostic models; expose, process and mount dental radiographs; provide instructions for patient self-care and nutritional counseling; and perform laboratory procedures. Upon successfully completing this program, you will be eligible to take the National, Regional and State Board Examinations for Dental Hygiene licensure, since Delta College's program is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education.

		Suggested Sequence	Sem Hrs
General Education Courses			
* BIO 131	Anatomy and Physiology I	■ ■ ■ ■	4
* BIO 132	Anatomy and Physiology II	■ ■ ■ ■	4
* BIO 203	General Microbiology	■ ■ ■ ■	4
* DH 100	Dental Hygiene Profession	■ ■ ■ ■	1
* DH 101	Dental Anatomy	■ ■ ■ ■	2
# ENG 111	College Composition I	■ ■ ■ ■	3
# ENG 112	College Composition II	■ ■ ■ ■	3
# POL 103	Introduction to American Government OR		
POL 111	American Government & Politics OR		
POL 212	State & Local Government OR		
HIS 103	A History of American Government	■ ■ ■ ■	3/4
# PSY 101	Applied Psychology OR		
# PSY 211	General Psychology	■ ■ ■ ■	3/4
# SOC 211	Principles of Sociology	■ ■ ■ ■	3
# SPH 114	Interpersonal Communications	■ ■ ■ ■	3
	SUBTOTAL		33/34

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 33 of this catalog for the required procedures.

Clinical Course Sequence

First Semester (Fall)

*DH 110	Dental Infection Control	2
*DH 111	Oral Examinations	1
*DH 112	Medical Assessment/Emergencies	2
*DH 114	Oral Health	2
*DH 115	Clinical Techniques	5
*DH 116	Preventive Nutrition	3
*DH 118	Head and Neck Anatomy	3
	SUBTOTAL	18

Second Semester (Winter)

*DH 120	Periodontics I	3
*DH 121	Dental Hygiene Seminar I	2
*DH 122	Oral Histology and Embryology	3
*DH 123	Dental Radiography	2
*DH 123 L	Dental Radiography Lab	1
*DH 125	Clinical Dental Hygiene I	4
LW 225	Lifelong Wellness	1
	SUBTOTAL	16

Third Semester (Spring Session)

*DH 124	Pharmacology	2
*DH 131	Dental Hygiene Seminar II	1
*DH 135	Clinical Dental Hygiene II	3
	SUBTOTAL	6

Fourth Semester (Fall)

*DH 210	Periodontics II	2
*DH 213	Oral Pathology	3
*DH 214	Dental Materials	4
*DH 215	Clinical Dental Hygiene III	6
*DH 216	Community Dentistry I	2
	SUBTOTAL	17

Fifth Semester (Winter)

*DH 220	Introduction to Orthodontics	2
*DH 222	Case Study Documentation	1
*DH 225	Clinical Dental Hygiene IV	6
*DH 227	Community Dentistry II	1
*DH 228	Dental Hygiene Seminar III	1
LW ---	Lifelong Wellness Elective	1
	SUBTOTAL	12

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 102/104

The following courses might improve your knowledge base for Dental Hygiene: HSC 105, CIS 118, CHM 111.

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

With a GPA of 2.0 over all

1. + Prior to enrolling in BIO 131, you must either successfully complete BIO 130 or pass the BIO 130 challenge exam.
2. It is highly recommended that you make an appointment with the Health and Wellness Counselor to go over the prerequisites and discuss your career choice prior to starting your prerequisites.
3. A maximum of 18 students will be accepted each Fall Semester for the Dental Hygiene courses.
4. Prerequisite qualifications are: a) high school graduate or GED equivalent; b) be admitted to Delta College; c) submit to Delta College complete transcripts from high school and other colleges attended; d) successfully complete prerequisite courses; e) follow the validation procedures as outlined on page 33 of this catalogue once the prerequisites are completed.
5. Dental Hygiene courses are offered day hours only and must be taken together in the sequence shown. You must achieve a minimum C (2.0) grade in each Dental Hygiene course to be eligible to continue in the program.
6. After enrolling in clinical, you must have a complete physical examination, including negative TB and Hepatitis carrier test. It is highly recommended that you talk to your family physician about receiving the Hepatitis Vaccine before you start the professional course sequence of Dental Hygiene.
7. You must maintain a current CPR certification throughout your enrollment in the Dental Hygiene courses plus you must maintain your certification to be a licensed Dental Hygienist in the State of Michigan.
8. In addition to tuition, fees and textbook costs, you must purchase laboratory coats, clinic shoes, uniform pants, safety glasses, and the Dental Hygiene Instrument Kit (additional costs approximately \$1,500).
9. Student Re-entry procedures are printed in the handbook given to all clinical students.
10. See page 94 for graduation requirements.
11. Delta College reserves the right to modify program requirements.
12. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

DUAL DEGREES

OPTIONS:

AUTOMOTIVE SERVICE TECHNOLOGY
DENTAL ASSISTING/GENERAL MANAGEMENT
DENTAL HYGIENE/GENERAL MANAGEMENT
HEALTH CARE SERVICES/PARAMEDIC
NURSING/GENERAL MANAGEMENT
PHYSICAL THERAPIST ASSISTANT/GENERAL
MANAGEMENT
RADIOGRAPHY/GENERAL MANAGEMENT
RESPIRATORY CARE/GENERAL MANAGEMENT
SURGICAL TECHNOLOGY/GENERAL MANAGEMENT

Associate in Applied Science Degree AND Associate in Business Studies Degree

Dual Associate degrees are available in several health curricula and the Automotive Service Technology curricula with the General Management Program. Generally, the requirements are completed simultaneously; however, the business courses normally will be completed prior to beginning your clinical sequence. Your diploma will list both the Associate in Applied Science Degree and the Associate in Business Studies Degree.

In addition to completing all the courses for an approved applied science program (see above), you must complete a minimum of 24 additional credits from the courses listed below.

If you have no prior college degree you will have to earn a **minimum** of 86 credits to earn a Dual Degree (62 for the Health Degree, 64 for the Automotive Service Technology Degree, and 24 for the Business Degree).

If you have earned a degree previously you may not use courses from that degree to satisfy the requirements of a "Dual Degree". It is possible that your previous degree may have included one or more of the required business courses (GB 153, 245). You do not have to retake such classes, but must replace them from the list of approved business courses under the dual degree to complete an additional 24 credits for the Dual Degree.

Business Courses

GB 153	Introduction to Business	3
GB 245	Principles of Management	3

The other 18 credits are to be selected from the following courses:

#ACC 111	Introductory Accounting	4
#ACC 211	Principles of Accounting I	4
ACC 212	Principles of Accounting II	4
CIS 120	Micro Computers in Business OR	
CIS 133	Introduction to Computer Information Systems	3/4
ECN 221	Principles of Economics I	4
GB 110	Business Math	3
GB 243	Principles of Marketing	3
GB 246	Supervision	3
GB 251	Business Law	3
GB 256	Human Resource Management I	3
OSE 151	Business Communications I	3
OSE 152	Business Communications II	3
OSE 170	Keyboarding OR	2
OSE 212	Microsoft Word Beginning	1
OSE 213	Microsoft Word Intermediate	2
OSE ---	Software course of your choice	


SUBTOTAL 24/25

CREDITS REQUIRED FOR A DUAL DEGREE VARY
ACCORDING TO THE CHOSEN HEALTH CURRICULA

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. # Credit may only be earned in either ACC 111 or 211.
2. Student Re-entry procedures are printed in the handbook given to all clinical students.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



Brian Gripenrog

Hometown
Midland

Major
Business Administration

Favorite Musical Group
Eros Ramozitti

Last Book Read
Nightmares and
Dreamscapes

Age
25

High School
Western High School

Favorite Food
Rice and beans

Most Admired Figure
John F. Kennedy

Hobbies
Reading, playing cards


Career Goals
Corporation management
department of a Grand
Rapids firm.

Why did I decide on Delta?

The main reason I decided on Delta was its accessibility to my handicap. I also liked the smaller classes that allow for better one-on-one interaction with the professors. The professors here are very available to the students, and I like that.

What do I think is the Delta Difference?

I like the fact that the teachers are always helpful with any problem students might have.



We are accepting applications.
Call Admissions now.
Get it right at Delta College.
Phones: 686-9093, or from Midland 495-4000, ext. 9093

ELECTRONIC ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

This program is being phased out. If you are currently enrolled in this program, considering entering this program, or would like to explore options, please see a Technical counselor.

As an electronic technician, you will design, build, test, trouble shoot, repair, and modify many types of electronic equipment. You may be an engineering aid in the laboratory, an electronic designer, or a field representative. Rather than emphasizing one or two titles, this program stresses the core of knowledge and skills common to this group of technical occupations. Also this program provides instruction in CAD, circuitry, and computer programming. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. Accreditation by TAC/ABET expands the graduates' market ability nationally as engineering technicians.

		Suggested Sequence	Sem Hrs
General Education Courses			
ENG 111	College Composition I	■ □ □ □	3
ENG 113	Technical Writing	□ ■ □ □	3
MTH 113	Applied Trigonometry	■ □ □ □	4
MTH 151	Pre-Calculus Mathematics OR	□ □ ■ □	4/5
MTH 161	Analytic Geometry and Calculus OR		
MTH 211	Applied Calculus		
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
PHY 111	General Physics I	■ □ □ □	4
POL 103	Introduction to American Government	■ ■ ■ ■	3
+ ---	Approved Math/Science Elective	■ ■ ■ ■	3
SUBTOTAL			26/27

Basic Program Requirements			
CAD 114	Auto CAD Introduction	■ ■ ■ □	2
EET 102	Electrical Measurements and Technology Careers	■ □ □ □	2
EET 103	Passive Circuits	□ □ □ □	3.5
EET 104	Circuits Analysis	□ ■ □ □	3.5
EET 120	Digital Circuits	■ □ □ □	3
EET 208	Active Circuits I with Computer Simulation A	□ □ ■ □	4
EET 209	Active Circuits I with Computer Simulation B	□ □ ■ □	4
EET 211	Active Circuits II	□ □ □ □	5
EET 215	Electronic Control and Automation	□ □ □ □	5
EET 226	Computer Electronics	□ ■ ■ □	6
EET 230	Soldering Techniques	□ □ ■ □	1
EET 231	Electronic Fabrication	□ □ □ □	3
MT 150	Mechanical Principles in Electronic Design	□ □ □ □	2
# ---	Approved EET Elective	□ □ ■ ■	3
SUBTOTAL			47

# Approved EET Electives			
EET 216	Advanced Electronic Circuits		4
EET 222	Advanced Logic Circuits		3
MT 220	Introduction to Fluid Power		3

+ Approved Math/Science Electives			
MTH 151	PreCalculus Mathematics OR		4
MTH 161	Analytic Geometry and Calculus OR		4
MTH 211	Applied Calculus		5
MTH 208	Elementary Statistics		3
MTH 231	Introduction to Quality Engineering Statistics		3
CHM 101	General Chemistry I		5
CHM 111	General/Inorganic Chemistry I		4
PHY 112	General Physics II		4
BIO 111	Principles of Biology		4
BIO 120	Introduction to Environmental Studies		4
GLG 111	Physical Geology		4
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			73/74

NOTATIONS:

- Students who are transferring to four year institutions that require a full calculus background should take MTH 151 or 161. MTH 211 is for students seeking only an Associate Degree.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

EMERGENCY MEDICAL TECHNICIAN ACADEMIC PROGRAM (Non-Degree)

The minimum requirements to be licensed as a Michigan EMT are the successful completion ("C"/2.0) grade or higher in EMT 101, EMT 102 and EMT 108, and the passing of the State of Michigan Basic EMT Exam (both written and practical portions). Employability with only a Basic EMT license is extremely limited and most EMT's in the Saginaw Valley area hold an Advanced EMT/Paramedic Michigan license.

Prior to enrollment in the Basic EMT sequence, you must provide documentation (Health Appraisal Form) of a current physical examination which confirms you are free from communicable disease and capable of performing the duties necessary for the safe care of patients. Health Appraisal Forms, which are good for one year only, may be picked up and **MUST** be returned to the College Health Office before beginning EMT classes.

Emergency Medical Technician Courses	Cr. Hr.
EMT 101 Basic EMT	6
EMT 102 Basic Field Experience	1
EMT 108 Rescue and Extraction	1
Total	8

These courses are described in Section VI, Course Descriptions.

Also see Fire Science, EMT Option



ENVIRONMENTAL TECHNICIAN

Associate in Applied Science Degree/ Certificate

Successful completion of the program will prepare you for employment as a hazardous materials technician, safety technician, solid waste technician, recycling technician, or as a team member in environmental consulting firms. Skills and knowledge that you should possess as a result of completing the program include: understanding of the specific safety and environmental regulations related to the work environment; familiarity with computers; basic understanding of chemical terminology; ability to read technical materials and translate what is read into action; ability to write comprehensible reports; ability to keep records; ability to make routine mathematical computations; understanding of how environmental regulations are formulated, and; understanding of the interrelated nature of environmental problems.

	Suggested Sequence	Sem Hrs
General Education Courses		
> ENG 111 College Composition I	■ ■ □ □	3
> ENG 113 Technical Writing	□ ■ ■ ■	3
GLG 130 Environmental Geology (recommended) OR		
GLG 111 Physical Geology	■ ■ ■ ■	4
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
MTH 119 Intermediate Algebra	□ ■ ■ □	4
MTH 208 Elementary Statistics	□ □ ■ ■	3
POL 103 Introduction to American Government	■ ■ ■ ■	3
SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications	■ ■ ■ ■	3
2 --- Electives	□ ■ ■ ■	3
SUBTOTAL		28
Basic Program Requirements		
>BIO 110 Environmental Science	■ ■ □ □	4
>CHM105 Technical Chemistry I	■ ■ □ □	5
>CHM106 Technical Chemistry II	□ □ □ ■	5
CHM230 Chemical Analysis/Instrumentation	□ □ ■ ■	4
>CPS125 Computer Literacy	■ ■ ■ ■	3
>ENV100 Environmental Regulations	■ ■ ■ ■	3
1>ENV151 HAZWOPER Training	■ ■ ■ ■	2.7
1>ENV152 Emergency Response to Industrial Spills	■ ■ ■ ■	1.6
1>ENV153 Confined Space Training	■ ■ ■ ■	1.3
1>ENV154 Hazardous Materials Shipping and Handling	■ ■ ■ ■	0.4
>PHY101 Applied Physics	□ □ ■ ■	4
SUBTOTAL		34
ADDITIONAL COURSES REQUIRED FOR CERTIFICATE ONLY		
3>MTH107 Algebra I	■ □ □ □	3
SUBTOTAL		3
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62
TOTAL CREDITS REQUIRED FOR CERTIFICATE		40

> **CERTIFICATE OPTION:** A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

1. ENV 151, ENV 152, ENV 153, and ENV 154 are presented as a series of training modules offered through Delta College Corporate Services. All training components are those required and detailed through OSHA Hazardous Material Training as well as other State and Federal regulations. Upon presentation of verification of completion of each of these modules to the chairperson of the Science Division, the student will receive the indicated amount of academic credit. This sequence of classes has fees in addition to normal tuition and fees. Cost for the entire series is approximately \$1,200.
2. Electives: If you are considering transferring to a university, review the Associate in Science degree requirements in the catalog and see a counselor since requirements of various transfer schools differ.

3. If you have high school background in chemistry and math or ASSET scores that meet this objective you should consider higher level chemistry and math courses. This is particularly important for students who may wish to transfer to a university to pursue a baccalaureate degree. Consult a counselor for appropriate courses and waiver.
4. See page 94 for graduation requirements.
5. Delta College reserves the right to modify program requirements.
6. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



FASHION MERCHANDISING

Associate in Business Studies Degree

This program can lead to careers in fashion buying, fashion merchandising, fashion design, bridal consulting, fashion show coordinating, and fashion display. The merchandisers of fashion perform numerous jobs such as, buying, selling, fashion writing, coordination, fashion illustration, bridal consulting, fashion show coordination, display and promotion work and serving fashion and educational representatives for pattern companies, accessory, and fabric manufacturers.

		Suggested Sequence	Sem Hrs
General Education Courses			
ART 115	Basic Design - 2 Dimensional	■ □ □ □	3
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
PSY 101	Applied Psychology OR		
PSY 211	General Psychology	■ ■ ■ ■	3/4
SUBTOTAL			11/12

Basic Program Requirements

*CED 122	Cooperative Education	□ □ □ ■	3
CIS 133	Introduction to Computer Information Systems	■ ■ ■ ■	4
FM 150	History & Dynamics of Fashion	■ □ □ □	3
*FM 151	Display	□ ■ ■ ■	3
*FM 155	Textiles	■ ■ ■ ■	3
*FM 170	Fund Theories of Fashion Design & Merchandising	□ ■ □ □	3
*FM 240	Fashion Coordination	□ □ □ ■	3
GB 110	Business Math	■ ■ ■ ■	3
GB 143	Principles of Advertising	■ ■ ■ ■	3
GB 145	Principles of Sales	■ ■ ■ ■	3
GB 153	Introduction to Business	■ ■ □ □	3
GB 247	Principles of Retailing	□ □ □ ■	3
*GB 248	Principles of Buying for Resale	□ □ □ ■	3
*OSE 151	Business Communications I	■ □ □ □	3
OSE 152	Business Communications II	□ ■ ■ ■	3
---	General Elective(s)	■ ■ ■ ■	4/5
SUBTOTAL			49/50
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			62

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

- The above program is intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college, you should consult a counselor.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

FINANCIAL INSTITUTION MANAGEMENT

OPTIONS: BANKING MANAGEMENT CREDIT UNION MANAGEMENT

Associate in Business Studies Degree

This program is designed to provide you with entry opportunities into the financial field as well as training if you are a current employee who desires to increase and upgrade your skills and knowledge of finance. Job opportunities are available in banks, savings and loan associations, credit unions, and agencies within areas such as: commercial and installment loan departments; real estate mortgage departments; check processing; bank operations supervision; computer programming; auditing and accounting. These programs are offered in conjunction with A.I.B. (American Institute of Banking) and I.F.E. (Institute of Financial Education, and C.U.N.A. - Credit Union National Association).

Financial Institution Management students must complete the required General Education courses listed below plus the courses listed in one of the areas of specialization.

		Suggested Sequence	Sem Hrs
General Education Courses			
>CIS 133	Introduction to Computer Information Systems	■ ■ ■ ■	4
>ECN 221	Principles of Economics I	□ ■ ■ ■	4
GB 110	Business Math	■ □ □ □	3
GB 153	Introduction to Business	■ □ □ □	3
GB 243	Principles of Marketing	□ ■ ■ ■	3
GB 245	Principles of Management	□ ■ □ □	3
OSE 151	Business Communications I	■ □ □ □	3
OSE 152	Business Communications II	□ ■ □ □	3
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
SUBTOTAL			31

Banking Management Option

>ACC 211	Principles of Accounting I OR		
>ACC 111	Introductory Accounting	■ □ □ □	4
>AIB 124	AIB Law & Banking OR		
>GB 251	Business Law I	□ □ ■ □	3
GB 252	Business Law II	□ □ □ ■	3
>AIB 160	Principles of Banking	■ ■ □ □	3
>AIB 173	Consumer Lending	□ □ ■ ■	3
>AIB 117	Understanding and Selling Bank Products	■ □ ■ □	2
3AIB ---	Elective OR		
3ECN 222	Principles of Economics II	■ ■ ■ ■	3/4
3 ---	Electives	■ ■ ■ ■	10/9
SUBTOTAL			31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			62
TOTAL CREDITS REQUIRED/CERTIFICATE			24

Credit Union Management Option

*ACC 211	Principles of Accounting I	■ ■ □ □	4
*CRM 160	Introduction to Credit Unions	■ □ □ □	3
CRM 201	Credit Union Fin. Counseling & Member Relations ...	□ □ ■ □	3
CRM 212	Credit Union Accounting	□ □ □ □	3
*AIB 173	Consumer Lending	□ ■ ■ □	3
*GB 251	Business Law	□ ■ ■ ■	3
*GB 256	Human Resource Management I	□ □ ■ ■	3
---	Electives	■ ■ ■ ■	9
SUBTOTAL			31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			62

Completion of courses marked > (23 credits) plus one credit of AIB or GB elective will earn a Certificate in Financial Institution Management/Banking Management (24 credits minimum).

NOTATIONS:

* A "C" (2.0) minimum grade is required in the Credit Union Management Program in each asterisked course.

- This program is intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college, you should consult a counselor.
- It is strongly recommended that students who might desire a 4 year bachelors degree take ACC 211 and complete the accounting sequence by electing ACC 212 Principles of Accounting II.
- If you take an AIB elective of 3 credits, you will need to take 10 credits of electives. If you take ECN 222 4 credits, you will need to take 9 credits of electives.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Approved Electives (continued):

		Sem Hrs
FST 213	Managing Company Tactical Operations: Tactics (MCTO:T)	0.8
FST 214	Arson Detection for the First Responder	0.8
FST 215	Conducting Basic Fire Prevention Inspections (CBPI)	0.8
FST 216	Building Construction Non-combustible/Fire Resistive	0.8
FST 217	Fire Service Supervision: Personal Effectiveness	0.8
FST 218	Fire Service Supervision: Team Effectiveness	0.8
FST 240	Internship in Fire Science	2
FST 300	Fire Officer III	3
FST 301	Incident Command System	1
FST 302	Leadership I Strategies for Company Success	1
FST 303	Leadership II Strategies for Personal Success	1
FST 304	Leadership III Strategies for Supervisory Success	1
FST 305	Firefighter Health and Safety: Program Implementation & Management	1
FST 306	Shaping the Future	1
FST 307	Incident Safety Officer	1
FST 308	Health and Safety Officer	1
FST 332	Advanced Fire Administration	3
FST 334	Fire Prevention Organization/Management	4
FST 338	Contemporary Issues in Fire Service	3
GB 243	Principles of Marketing	3
GB 265	International Business	3
IS 104	Construction Foreman Training	3
IS 120	Supervisor/Employee Relations	3
PHL 203	Business Ethics	3
SPH 202	Oral Communications for Managers	3

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. Recommended Lifelong Wellness classes are LW 111, 172, 173, or 174.
2. Before being admitted to the Delta College Basic EMT sequence, you must provide evidence of completion of a recent physical exam. This exam confirms that you are free of communicable diseases, and capable of performing duties necessary for safe patient care. The minimum requirement to be licensed as a Michigan EMT is successful completion of the Delta College courses EMT 101, 102, and 108 with "C" minimum grades and the passing of the State of Michigan Basic EMT exam. Other students who are enrolled in the Fire Science program and hold a current EMT license may receive credit by presenting a copy to the Records and Registration Office.
3. Both FST 104 and FST 230 are required for the Fire Investigation/Prevention option and Leadership & Training option.
4. Approved electives include the courses listed under "Approved Electives" *plus* can be any combination of required (non-elective) courses from any of the other options.
5. See page 94 for graduation requirements.
6. Delta College reserves the right to modify program requirements.
7. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



GRAPHIC ARTS TECHNOLOGY

OPTIONS: DESIGN

PRINTING

Associate in Applied Science Degree/Certificate

Printing: This program is designed to give you the knowledge and skills to prepare art and copy materials for press and to operate printing equipment. The Printing Option provides education in the conventional printing and platemaking procedures, including camera operation, developing negatives and film assembly (stripping), as well as electronic pre-press procedures and film assembly done with computer hardware and software. Lithography or photo offset printing is the dominant method of printing today. As a Lithographer, you will be responsible for a variety of printing activities including photographing copy and pictures, making the printing plates and producing the printed page.

Design: The Graphic Arts Technology Design Option concentrates on helping you develop creative thinking processes, solutions to specific design problems, and aesthetic awareness. It will give you the technical knowledge and skills demanded of today's artist/designer for output of printed and digital communications. As a Graphic Designer, you will plan, design and draw illustrations for all types of advertisements, displays, television commercials, books, magazine articles and advertisements, posters, calendars, and hundreds of other items. You will also create movie and television cartoons, be involved in fashion illustration, greeting card illustration, industrial design, multi-media, software design, Web page design and many other kinds of art work.

	Suggested Sequence	Sem Hrs
General Education Courses		
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing	□ ■ ■ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government	■ ■ ■ ■	3/4
>SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications	■ ■ ■ ■	3
# --- --- Approved Electives	■ ■ ■ ■	6
SUBTOTAL		20/21

Approved Electives

ART 112 Drawing II	3
ART 116 Basic Design 3-D	3
ART 217 Painting I	3
ART 218 Painting II	3
CAD 114 CAD System	2
GB 143 Principles of Advertising	3
GB 153 Introduction to Business	3
GB 158 Public Relations	3
GB 243 Principles of Marketing	3
IHU 216 Production Student Publication	4
MTH 119 Intermediate Algebra	4
OSE 170 Keyboarding	2
PHO 102 Photography II	3

DESIGN OPTION:

>ART 111 Drawing I	■ □ □ □	3
>ART 115 Basic Design 2D	■ □ □ □	3
ART 130 Fractal Design Painter	■ □ □ □	3
ART 151 Art History & Appreciation I	■ □ □ □	3
ART 152 Art History & Appreciation II	□ ■ □ □	3
>ART 271 Digital Imaging: Photoshop I	■ ■ ■ □	3
ART 271B Digital Imaging: Photoshop II	□ □ □ ■	3
CPS 125 Computer Literacy	■ ■ □ □	3
>GAT 100 Introduction to Graphic Arts	■ □ □ □	3
>GAT 222 PageMaker OR		
ART 273 PageMaker	■ ■ ■ □	3
>GAT 224 QuarkXPress OR		
ART 276 QuarkXPress	□ □ ■ □	3
>GAT 226 Illustrator OR		
ART 277 Illustrator	□ □ □ ■	3
>GAT 230 Computer Graphics OR		
ART 275 Computer Graphics	□ □ □ ■	3
>GAT 231 Electronic Pre-Press I	□ □ □ ■	3
PHO 101 Photography I	■ ■ ■ ■	3

DESIGN OPTION SUBTOTAL: 45

TOTAL CREDITS REQUIRED FOR

ASSOCIATE DEGREE (DESIGN OPTION) 65/66

TOTAL CREDITS REQUIRED FOR CERTIFICATE (DESIGN OPTION) 30

PRINTING OPTION:

>ART 271 Digital Imaging: Photoshop I	■ ■ ■ □	3
ART 271B Digital Imaging: Photoshop II	□ □ □ ■	3
CIS 160 Introduction to Internet	■ ■ ■ ■	2
CPS 125 Computer Literacy	■ ■ □ □	3
>GAT 222 PageMaker OR		
ART 273 PageMaker	□ ■ ■ □	3
>GAT 100 Introduction to Graphic Arts	■ □ □ □	3
>GAT 113 Pre-Production Graphic/Film A	■ ■ □ □	6
>GAT 224 QuarkXPress OR		
ART 276 QuarkXPress	□ □ ■ □	3
GAT 226 Illustrator OR		
ART 277 Illustrator	□ □ □ ■	3
GAT 230 Computer Graphics OR		
ART 275 Computer Graphics	□ □ □ ■	3
>GAT 231 Electronic Pre-Press	□ □ □ ■	3
>GAT 240 Offset Press Fundamentals I	□ □ □ ■	3
>GAT 242 Offset Press Fundamentals II	□ □ □ ■	3
PHO 101 Photography I	■ ■ ■ ■	3

PRINTING OPTION SUBTOTAL: 44

TOTAL CREDITS REQUIRED/ASSOCIATE DEGREE (PRINT OPTION) 64/65

TOTAL CREDITS REQUIRED/CERTIFICATE (PRINT OPTION) 30

NOTATIONS:

- > **CERTIFICATE OPTION** - A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".
- 1. See page 94 for graduation requirements.
- 2. Delta College reserves the right to modify program requirements.
- 3. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

HUMAN SERVICES TECHNICIAN

Associate in Applied Science Degree

As a human services technician, you will utilize knowledge based on the social sciences, as well as a core of intervention skills whose primary purpose is defining and responding to human problems. You will work with people in a helping capacity serving children, families, mentally disturbed, physically handicapped, welfare recipients, delinquent youth, substance abusers, and aging. This program of study leads to an Associate in Applied Science degree and is designed for career entry and/or advancement and/or transfer to a four year college or university as a junior, particularly in preparation for a Bachelors Degree in Social Work.

		Suggested Sequence	Sem Hrs
General Education Courses			
ENG 111	College Composition I	■ □ □ □	3
ENG 112	College Composition II	□ ■ □ □	3
---	Humanities Electives	■ ■ ■ ■	8
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
---	Science Electives	□ ■ ■ ■	8
POL 103	Introduction to American Government	■ ■ ■ ■	3
---	General Electives	■ ■ ■ ■	9
SUBTOTAL			36

Human Services (Core) Courses

1 CD 116A	Families in American Culture OR		
PSY 241	Abnormal Psychology	□ □ ■ ■	3
HSR 101	Introduction to Human Services I	■ □ □ □	2
HSR 102	Introduction to Human Services II	□ ■ □ □	2
PSY 211	General Psychology	□ ■ □ □	4
PSY 223	Child Psychology	□ □ ■ ■	3
SOC 211	Principles of Sociology	■ ■ ■ ■	3
SOC 250	Introduction to Social Work	□ □ ■ ■	3
Choose two courses from the following:			
ED 101	Education of the Exceptional Child		
PSY 130	Psychology of Substance Abuse		
SOC 212	Social Problems	□ □ ■ ■	6
SUBTOTAL			26
TOTAL CREDITS REQUIRED/ASSOCIATE DEGREE			62

1. CD 116A is recommended for students who intend to work with families and children. PSY 241 is recommended for students who intend to work in the mental health field.
2. See page 94 for graduation requirements.
3. Delta College reserves the right to modify program requirements.
4. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

INDUSTRIAL SUPERVISION

Associate in Applied Science Degree/ Certificate

As a supervisor, you will be responsible for the output of other workers and for maintaining work schedules, production, safety, and employee records pertaining to your industrial plant department. Employers generally will choose people for supervisory positions who have experience in their industry, job related skills, and leadership qualities. Therefore, most supervisors rise through the ranks and completion of this program alone will not ensure employment as a supervisor in an industrial plant. The main emphasis of this program is to provide you, as a currently employed supervisor or aspiring supervisor, with knowledge of supervisory responsibilities pertaining to management skills.

		Suggested Sequence	Sem Hrs
General Education Courses			
ENG 111	College Composition I	■ □ □ □	3
ENG 113	Technical Writing	□ □ □ □	3
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government	■ ■ ■ ■	3
SPH 112	Fundamentals of Oral Communication OR		
SPH 114	Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL			14

Business and Technology Courses

>IS 110	Industrial Supervision	■ □ □ □	3
>IS 118	Industrial Safety	■ ■ □ □	2
>IS 120	Supervisor-Employee Relations	■ ■ □ □	3
>MFG 111	Manufacturing Processes	□ □ □ □	3
>QA 110	Quality Problem Solving Tools	■ ■ □ □	1
>QA 120	Quality & Production Management	□ □ □ □	2
#---	Computer Electives	■ ■ ■ ■	3
---	General Electives	■ ■ ■ ■	12
#---	Supervisor Skills Electives (Approved Courses only)	■ ■ ■ ■	6
#---	Technical Electives	■ ■ ■ ■	13
SUBTOTAL			48

Quality Systems Certificate Requirements

>IS 240	Production Planning & Control	□ □ ■ ■	4
>MT 110	Machine Tool Calculations	■ □ □ □	4
>QA 124	Quality Systems I	□ □ ■ ■	3
>QA 126	Quality Systems II	□ □ ■ ■	3
>QA 191	Group Dynamics	□ □ ■ ■	1
SUBTOTAL			15

> Certificate Option - A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE	62
TOTAL CREDITS REQUIRED FOR CERTIFICATE	29

Suggested Technical Electives: Courses with codes MFG, ROB, IS, MT, MS, DRF, CAD or CNC.

Suggested Computer Electives

CIS 133	Introduction to Computer Information Systems		4
CIS 134	Lotus 1-2-3		3
CIS 265	Introduction to Computer Programming		3
CPS 125	Computer Literacy		3

Approved Supervisor Skills Electives

ECN 221	Principles of Economics I		4
GB 153	Introduction to Business		3
GB 231	Industrial Relations		3
PSY 101	Applied Psychology		3
SOC 211	Principles of Sociology		3

NOTATIONS:

1. Beginning certificate program can be expanded to Industrial Supervision Associate Degree.
2. Up to 10 credits may be granted for work experience as an Industrial Supervisor. Contact the Testing/Assessment Office at Delta.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Associate in Business Studies Degree

As an interior designer, you will help make our living, working and playing areas more attractive and useful. You may help clients select furniture, draperies, other fabrics, floor coverings, and accessories, as well as estimate what services or furnishings will cost. The main purpose of designers in retail stores is to provide your customers with interior design services. When you begin as an interior designer, you will usually serve a training period, either with design firms, in department stores, or in furniture stores.

	Suggested Sequence	Sem Hrs
General Education Courses		
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
PSY 101 Applied Psychology OR		
PSY 211 General Psychology	■ ■ ■ ■	3/4
SUBTOTAL		8/9
Business Courses		
* ARC 105 Architectural Drafting I	■ □ □ □	4
* CED 122 Cooperative Education/ID	□ □ □ ■	3
* FM 155 Textiles	■ □ □ □	3
* GB 110 Business Math	■ □ □ □	3
GB 145 Sales	□ □ □ □	3
GB 153 Introduction to Business	■ □ □ □	3
GB 247 Principles of Retailing	□ □ □ ■	3
* ID 100 Introduction to Interior Design	■ □ □ □	3
* ID 170 Design Elements	□ □ □ □	4
* ID 200 Space Analysis & Presentation OR	□ ■ □ □	3
* ARC 200 Spatial Analysis and Presentation		
* ID 210 Furniture	□ ■ □ □	3
* ID 230 Applied Interior Design	□ □ □ ■	3
ID 240 Contract Design/Commercial I	□ □ □ □	2
ID 241 Contract Design/Commercial II	□ □ □ □	2
ID 245 Design Trends	□ □ □ ■	2
OSE 151 Business Communications I	□ ■ □ □	3
OSE 152 Business Communications II	□ □ □ ■	3
--- --- General Elective(s)	■ ■ ■ ■	4
SUBTOTAL		54
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62/63

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. This Program is not intended to transfer to a four-year college or university. It is designed for students who want immediate employment after graduation from Delta.
- 2. ID 250 Seminar in Interior Design (2 credits) and ID 251 Merchandise Mart Experience (1 credit) are optional but encouraged.
- 3. See page 94 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.
- 5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

An Employer's Opinion

"United Parcel Service turns to Delta College for their employment needs because of the knowledge and integrity of the students who are looking for jobs that could benefit their future."

Roxanne Morris
United Parcel Service (U.P.S.)
Saginaw

INTERNATIONAL STUDIES

OPTIONS: WITHOUT FOREIGN LANGUAGE SKILLS WITH FOREIGN LANGUAGE SKILLS

Certificate Program

While pursuing your individual program of studies as a Delta College student, you can earn an "add-on" Certificate in International Studies by successfully completing applicable courses from designated sets (A, B, C) of present Delta courses (or their equivalents). This program is designed to: 1) provide students a wider and deeper range of international awareness and knowledge; 2) promote an interest in other cultures and places; 3) promote an interest in foreign languages; 4) lay the groundwork for future international learning options for you as a Delta graduate, and 5) enhance employment opportunities. The Certificate in International Studies is an "add-on" to the credential for your present program of studies. Courses/credits you already have may be applicable toward the certificate requirements.

	Sem	Hrs
Basic Certificate Program Requirements		
* GEO 113 World Cultural Geography	4	
* HIS 112 Survey of Later Western Civilization	4	
--- --- Required - Choose from Set B courses	6	
SUBTOTAL	14	

OPTION 1 - WITHOUT FOREIGN LANGUAGE SKILLS

--- --- 3 courses - any combination from Sets A, B, C	10
OPTION 1 TOTAL	24

OPTION 2 WITH FOREIGN LANGUAGE SKILLS

--- --- Foreign Language, 8 cr. (see Set A)	8
--- --- 1 course - from Set B or C	2/3
OPTION 2 TOTAL	24/25

See below for sets A, B, and C of designated courses:

SET A:

Foreign Languages (8 cr. required for Option 2). A two semester sequence is highly recommended.

FR --- French	4
GE --- German	4
RUS --- Russian	4
SPA --- Spanish	2/4

SET B:

Broad scope Global/International courses (some not offered every semester)

ECN 268 International Studies in Economics	4
GB 265 International Business	3
GEO 111 Introduction to Physical Geography	4
GEO 255/SOC 265 Third World Development	4
HIS 111 Survey of Early Western Civilization	4
HIS 232 History of Russia	3
POL 221 Comparative Government	3
POL 225 International Relations	3
1. SOC 231 Cultural Anthropology (is highly recommended)	3

SET C:

Specialized Global/International courses and/or NOT regularly offered courses:

AGR 205 Agricultural Marketing I: Domestic and Global	3
AGR 206 Agricultural Marketing II: Domestic and Global	3
ARC 101/RC 102 Materials and Methods of Construction	3
BIO 230/SOC 230 Physical Anthropology/Archaeology	4

BIO 268 International Studies in Biology	4
ECN 268 International Studies in Economics	4
GB 268 International Studies in Business	4
GEO 105 Human Geography	4
GEO 222 Geography of Asia	3
GEO 223 Geography of Europe	3
GEO 226 Geography of the U.S. and Canada	3
GEO 260 Geography of the Pacific Islands	3
GEO 262 Geography of the Canadian Shield	1
GEO 264 Geography of the Western U.S. & Canada	3
GEO 268 International Studies in Geography	4
GLG 268 International Studies in Geology	4
HIS 214 Pre-European African History	3
HIS 217 Introduction to La Raza (Mexican-American) Studies	3
HIS 218 Heritage: Civilization and the Jews	2
HIS 268 International Studies in History	4
HIS 275 The Vietnam War	3
IHU 161/SOC 161 International Projects in Cross Cultural Learning	1
IHU 162/SOC 162 International Projects in Cross Cultural Learning	2
LIT 241 Introduction to Mythology	3
LIT 242 British Literature	3
LIT 243/GEO 243 Literary Geography of the Third World	4
LIT 245 Biblical Literature: Old Testament	3
LIT 246 Biblical Literature: New Testament	3
LIT 268 International Studies in Literature	1-4
MUS 211 Music History I	3
MUS 212 Music History II	3
POL 222 Middle East: Government & Politics	3
POL 229 Political Terrorism	3
POL 250 Introduction to British Government	3
POL 268 International Studies in Political Science	4
POL 275 The Vietnam War	3
SOC 235 Myths of the World	3
SOC 240 Sociology of Sex and Gender	3
SOC 265/GEO 265 Third World Development	4
SOC 268 International Studies in Sociology	4
SOC 271 Religion and Society	3
SPA 101 Hispanic Civilizations	2
SPA 275 Introduction to Spanish Fiction	3
TOTAL CREDITS REQUIRED/CERTIFICATE	24

* A "C" minimum grade is required in each asterisked course.

1. SOC 231 - Cultural Anthropology - is a highly recommended "Basic Program" elective.
2. The semester hours for the Certificate in International Studies are calculated by adding the TOTAL hours earned from successful completion of the courses listed as Basic Certificate Program Requirements, and courses from Sets A, B, or C (or their equivalents) as appropriate for any individual student.
3. Questions regarding this program may be directed to the Director of International/Intercultural Programs or the Counseling Office.
4. See page 94 for graduation requirements.
5. Delta College reserves the right to modify program requirements.

LEGAL ASSISTANT

Associate in Business Studies Degree/ Certificate

Not all legal work requires a law degree. In recent years, lawyers have increasingly used legal assistants, also called "Paralegals" or "Legal Technicians," to provide legal services to more persons at less cost. As a legal assistant you will work directly under the supervision of a lawyer. While the lawyer assumes responsibility for the legal assistant's work, you will often be allowed to perform all the functions of a lawyer other than accepting clients, setting fees, giving legal advice, or presenting a case in court. You will generally do background work for the lawyer and help a lawyer prepare litigation for trial by investigating the facts of the case to make sure that all relevant information is uncovered.

You may conduct research to identify the appropriate laws, judicial decisions, legal articles, and other material that will be used to determine whether or not the client has a good case. After analyzing all the information, you may prepare a written report that is used by the attorney to decide how the case should be handled. If the attorney decides to file a lawsuit on behalf of the client, you may prepare legal arguments, draft pleadings to be filed with the court, obtain affidavits, and assist the attorney during the trial. You may also keep files of all documents and correspondence important to the case. A growing number of legal assistants are using computers in their work. Computer software packages are increasingly used to search legal literature stored in the computer and identify legal texts relevant to a specific subject.

General Education Courses

	Suggested Sequence	Sem Hrs
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II	□ ■ □ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
PSY 101 Applied Psychology OR		
PSY 211 General Psychology	■ ■ ■ ■	3/4
SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications	■ ■ ■ ■	3
--- --- General Elective	■ ■ ■ ■	3
SUBTOTAL		20/21

Business Courses

CIS 133 Introduction to Computer Information Systems OR		
OSE 145 Integrated Office Systems	■ □ □ □	4
>* LAS 110 Legal Assistant: Roles and Responsibilities	■ □ □ □	2
>* LAS 115 Principles of Substantive Law	■ □ □ □	3
>* LAS 120 Legal Research & Writing I	□ □ □ □	3
>* LAS 125 Civil Litigation I	□ ■ □ □	2
>* LAS 130 Legal Research & Writing II	□ ■ □ □	3
>* LAS 135 Civil Litigation II	□ ■ □ □	2
>* LAS 150 Real Estate Law	□ ■ ■ ■	2
>* LAS 210 Estate & Trust Administration	□ □ □ □	2
>* LAS 240 Domestic Relations	□ □ ■ ■	2
>* LAS 245 Personal Injury	□ □ ■ ■	3
>* LAS 250 Corporate Law	□ □ ■ ■	2
OSE 151 Business Communications I	■ ■ □ □	3
# --- --- Business Approved Electives	■ ■ ■ ■	5
# >--- --- LAS Elective	■ ■ ■ ■	4/5
SUBTOTAL		42/43

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

TOTAL CREDITS REQUIRED FOR CERTIFICATE 30

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

You must earn an Associate of Arts, Associate of Science, or Bachelor's degree from an accredited institution to qualify for the awarding of the Legal Assistant Certificate program and must complete the Certificate Curriculum in order to earn a Certificate in Legal Assistant Studies. You may be enrolled concurrently in an Associate or Bachelor degree program.

Approved Electives

	Sem Hrs
ACC 211 Principles of Accounting I	4
CIS 132 Spreadsheet Fundamentals	2
CIS 260 Database	3
GB 153 Introduction to Business	3
GB 251 Business Law I	3
GB 252 Business Law II	3
LAS 201 Computer Assisted Legal Research	1
LAS 220 Environmental Law	2
LAS 230 Administrative Law	2
LAS 235 Criminal Law and Procedure	3
LAS 253 Survey of Bankruptcy Law	2
LAS 260 Legal Assistant Internship	2
OSE 155 Editing	2
OSE 171 Document Processing: Beginning	3
OSE 172 Document Processing: Intermediate	3

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. Proficiency in OSE 170, Keyboarding is required for this program; however, it may be waived by successfully passing a keyboarding test. See Counseling Center.
2. See page 94 for graduation requirements.
3. Delta College reserves the right to modify program requirements.
4. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

MACHINE TOOL OPERATIONS

OPTIONS:

INDUSTRIAL SUPERVISION MACHINE TOOL OPERATIONS

Associate in Applied Science Degree/Certificate

In addition to the skills you will gain from courses completed in the Machine Tool Operations Certificate program, when you enroll in the Associate degree program you are offered two options; one is greater in depth in machine operator training, the other offers greater breadth through supervisory training.

	Suggested Sequence	Sem Hrs
General Education Courses		
>*ENG 111 College Composition I	■ ■ □ □	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing	□ □ ■ ■	3
>*MTH 103 Applied Geometry and Trigonometry OR		
MTH 113 Applied Trigonometry	□ ■ □ □	4
>*MTH 111 Applied Algebra OR		
MTH 119 Intermediate Algebra	■ □ □ □	4
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL		22

Technical Core Courses		
>*CAD 114 AutoCAD Introduction	■ □ □ □	2
>*CNC 160 Computer Numerical Control Programming I	■ ■ □ □	3
>*DRF 120 Beginning Industrial Blueprint Reading	■ □ □ □	2
>*DRF 124 Blue Print Reading for Machine Tool Operators	■ □ □ □	2
>*MS 101 Machine Shop I	■ □ □ □	4
>*MS 102 Machine Shop II	■ □ □ □	4
>*MS 103 Machine Shop III	■ □ □ □	4
>*MS 104 Machine Shop IV	□ ■ □ □	4
>*MS 105 Machine Shop V	□ ■ □ □	4
>*MS 106 Machine Shop VI	□ ■ □ □	4
>*MS 107 Machine Shop VII	□ □ ■ □	4
>*MS 108 Machine Shop VIII	□ □ ■ □	4
>*MS 109 Machine Shop IX	□ □ ■ □	4
>*MS 112 Ferrous Heat Treatment	■ ■ □ □	2
>*MS 120 Machinist's Handbook	■ ■ □ □	2
SUBTOTAL		49

Industrial Supervision Option:		
* IS 110 Industrial Supervision	■ ■ □ □	3
* IS 118 Industrial Safety	■ ■ ■ ■	2
* IS 120 Supervisor/Employee Relations	□ □ ■ ■	3
* MFG 111 Manufacturing Processes	■ ■ ■ ■	3
* OA 120 Quality and Productivity Management	□ □ ■ ■	3
SUBTOTAL		14

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 85

Machine Tool Operations Option:		
* MS 210 Machine Shop X	□ □ □ ■	4
* MS 211 Machine Shop XI	□ □ □ ■	4
* MS 212 Machine Shop XII	□ □ □ ■	4
SUBTOTAL		12

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 83

TOTAL CREDITS REQUIRED FOR CERTIFICATE 61

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. A waiting list is maintained for the program by the faculty. You may put your name on the list by indicating on your Delta application that you want Machine Tool Operations, Code A1 or B9, or by filling out an application in the Counseling Center office. For more information and program details, see a Counseling staff member.
2. MS 101 through 109 are not necessarily taken in the order listed. The faculty will assign you to your next class based on your progress/machine availability. Usually three five-week machine shop classes are taken per semester.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



MANAGEMENT

OPTIONS:

**GENERAL
MARKETING
OFFICE SERVICES**

**RETAIL
SMALL BUSINESS**

Associate in Business Studies Degree/ Certificate

Delta College offers the following five specialized management degree options:

GENERAL MANAGEMENT: This program is designed to provide a basic foundation in the major functional areas of business management and allows you to structure an individual program that will meet your own needs.

MARKETING MANAGEMENT: This program is designed to prepare you for a career in the field of marketing. As a graduate you will have studied the basics of: advertising from the marketing usage point of view; consumer behavior relating to buying; merchandising policies, budgets and planning; sales; retail organizational structure; product promotion and distribution.

OFFICE SERVICES MANAGEMENT: This program is designed to provide office operations management skills such as: developing and managing systems for office procedures; report and data compilation; filing and record keeping; information gathering techniques; personnel administration.

RETAIL MANAGEMENT: This program is designed to provide skills related to the distribution of merchandise and services within a retail store through buying procedures, inventory control and pricing; marketing processes and functions; advertising strategies.

SMALL BUSINESS MANAGEMENT: This program is designed specifically for you if you plan to own and manage your own business, work in a small business, or if you currently own a business and want to become more proficient with your skills.

General Education Courses (Required for all options)

	Suggested Sequence	Sem Hrs
ECN 221 Principles of Economics I	■ ■ ■ ■	4
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
SUBTOTAL		9

Business Courses (Required for all options)

CIS 133 Introduction to Computer Information Systems	■ ■ □ □	4
>GB 110 Business Math	■ ■ □ □	3
>GB 153 Introduction to Business	■ ■ □ □	3
* GB 245 Principles of Management	□ ■ □ □	3
* >GB 251 Business Law I	□ ■ □ □	3
* >OSE151 Business Communication I	■ ■ □ □	3
OSE152 Business Communication II	□ ■ □ □	3
SUBTOTAL		22

General Management

ACC 211 Principles of Accounting I	□ ■ □ □	4
ACC 212 Principles of Accounting II	□ □ □ □	4
GB 243 Principles of Marketing	□ □ ■ ■	3
GB 256 Human Resources Management I	□ □ ■ ■	3
GB 265 International Business	□ □ ■ ■	3
GB 274 Computer Aided Decisions	□ □ □ ■	2
--- --- Electives	■ ■ ■ ■	12
SUBTOTAL		31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62/65

Marketing Management

ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting I	□ ■ □ □	4
GB 143 Principles of Advertising	□ ■ □ □	3
GB 145 Principles of Sales	■ ■ □ □	3
GB 158 Public Relations OR		
SOC 211 Principles of Sociology	■ ■ □ □	3
* GB 243 Principles of Marketing	□ □ ■ ■	3
GB 247 Principles of Retailing OR		
GB 248 Principles of Buying for Resale OR		
GB 265 International Business	□ □ ■ ■	3
* GB 253 Applied Marketing Strategies	□ □ □ ■	3
GB 274 Computer Aided Decisions	□ □ □ ■	2
--- --- General Electives	■ ■ ■ ■	7
SUBTOTAL		31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

Office Services Management

ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting I	□ ■ □ □	4
CIS 132 Spreadsheet Fundamentals	□ ■ □ □	2
CIS 260 Database	□ □ □ □	3
* GB 256 Human Resources Management I	□ □ ■ ■	3
OSE 145 Integrated Office Systems	■ ■ □ □	4
OSE 155 Editing	■ ■ □ □	2
OSE 158 Records Management	■ ■ □ □	3
OSE 268 Professional Office Procedures	□ □ □ ■	3
--- --- General Electives	■ ■ ■ ■	7
SUBTOTAL		31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

Retail Management

ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting I	□ ■ □ □	4
CED 120 Co-Op: Retail/Management	□ ■ □ □	3
* GB 247 Principles of Retailing	□ □ ■ ■	3
FM 151 Display	■ ■ □ □	
GB 143 Principles of Advertising	■ ■ □ □	
GB 145 Principles of Sales	■ ■ □ □	12
GB 243 Principles of Marketing	□ □ ■ ■	
GB 248 Principles of Buying for Resale	□ □ ■ ■	
GB 256 Human Resources Management I	□ □ ■ ■	
--- --- General Electives	■ ■ ■ ■	9
SUBTOTAL		31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

Small Business Management

>ACC 111 Introductory Accounting OR		
>ACC 211 Principles of Accounting I	□ ■ □ □	4
>CIS 120 Small Computer Systems	□ ■ □ □	3
* >GB 131 Small Business Management I	■ ■ □ □	3
* >GB 132 Small Business Management II	□ ■ □ □	3
>GB 145 Principles of Sales	■ ■ □ □	3
>GB 243 Principles of Marketing	□ □ ■ ■	3
>GB 252 Business Law II	□ □ □ ■	3
--- --- General Electives	■ ■ ■ ■	9
SUBTOTAL		31
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62
TOTAL CREDITS REQUIRED FOR CERTIFICATE PROGRAM		34

> **Certificate Option** - A certificate will be awarded when you successfully complete courses preceded by the ">" sign.

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. In only the Office Services Management option, OSE 145 may be substituted for CIS 133 (one of the Business Courses required). If this is done, the number of elective credits required will increase to 9.
- 2. OSE 145, OSE 151, CIS 132, CIS 260 are prerequisites for OSE 268.
- 3. For more information about the Co-Op Program, inquire at room F-40 (Allied Health Building) or phone 686-9474.
- 4. See page 94 for graduation requirements.
- 5. Delta College reserves the right to modify program requirements.
- 6. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

MANAGEMENT/SUBSEQUENT DEGREE

- Option I: Business Management**
Option II: 3+1 Leading to Bachelor Degree in Management from Northwood University

Associate in Business Studies Degree

Option I: Business Management: Students who already have an Associate or Bachelor Degree from a regionally accredited institution must have 24 credits by instruction at Delta College. Accordingly, the minimum number of credits earned must equal the credits required for the first degree plus 24. Included in the 24 credits will be at least one computer course, one accounting course and GB 245. Choose from the list below:

Course	Credits
ACC 111 Introductory Accounting OR	4
ACC 211 Principles of Accounting I	4
ACC 212 Principles of Accounting II	4
CIS 133 Introduction to Computer Information Systems OR	
CIS 120 Small Computer Systems OR	
OSE 145 Integrated Office Systems	3/4
ECN 221 Principles of Economics	4
GB 153 Introduction to Business	3
GB 243 Principles of Marketing	3
GB 245 Principles of Management	3
GB 251 Business Law I	3
GB 256 Human Resources Management I	3
GB 257 Human Resources Management II	3
GB 274 Computer Aided Decision Making	2
GB 246 Supervision	3
GB 265 International Business	3
GB --- Business Electives	3
OSE 151 Business Communications I	3
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE	24

Option II: 3 + 1 Northwood: Students who already have an Associate Degree in any field, (other than management programs) from a regionally accredited institution, who wish to obtain a Bachelor Degree in Management through the Delta College-Northwood partnership must complete the following Delta classes and then complete their senior year at Northwood.

Course	Credits
ACC 211 Principles of Accounting I	4
ACC 212 Principles of Accounting II	4
CIS 133 Introduction to Computer Information Systems OR	
OSE 145 Integrated Office Systems	4
ECN 221 Principles of Economics I	4
ECN 222 Principles of Economics II	4
GB 153 Introduction to Business	3
GB 243 Principles of Marketing	3
GB 245 Principles of Management	3
GB 251 Business Law I	3
MTH 208 Elementary Statistics (Math 107 & 119 Prereq.)	3
PHL 203 Business Ethics OR PHL 215 Health Care Ethics OR	
PHL 230 Bioethics	3
SUBTOTAL	38
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE	24

NOTATIONS:

- Official transcript documenting previous degree will have to be on file in the Records Office.
- Completion of the above classes will give you an Associate Degree in Business Management from Delta College. Some of the above credits may have been earned on an earlier degree, the minimum number of credits earned must equal the credits required for the first degree plus 24.
- Contact the Delta College Counseling Office at 686-9330 for more information.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.

MANAGEMENT/QUALITY SYSTEMS - INDUSTRIAL SUPERVISION

Certificate Program

Upon completion of the Quality Systems - Industrial Supervision Certificate program, you will have the knowledge and skills necessary to effectively plan and implement an internal quality system.

In addition to those abilities, when you enroll in the Associate degree program, as a supervisor you will be responsible for the output of other workers and for maintaining work schedules, production, safety, and employee records pertaining to your industrial plant department. Employers generally will choose people for supervisory positions who have experience in their industry, job related skills, and leadership qualities. Therefore, most supervisors rise through the ranks and completion of this program alone will not ensure employment as a supervisor in an industrial plant. The main emphasis of this program is to provide you, as a currently employed supervisor or aspiring supervisor, with knowledge of supervisory responsibilities pertaining to management skills.

Technology Courses

IS 110 Industrial Supervision	■ ■ ■ ■ ■	3
IS 118 Industrial Safety	■ ■ ■ ■ ■	2
IS 120 Supervisor-Employee Relations	■ ■ ■ ■ ■	3
IS 240 Production Planning & Control	■ ■ ■ ■ ■	4
MFG 111 Manufacturing Processes	■ ■ ■ ■ ■	3
MT 110 Machine Tool Calculations	■ ■ ■ ■ ■	4
QA 110 Quality Problem Solving Tools	■ ■ ■ ■ ■	1
QA 120 Quality & Production Management	■ ■ ■ ■ ■	2
QA 124 Quality Systems I	■ ■ ■ ■ ■	3
QA 126 Quality Systems II	■ ■ ■ ■ ■	3
QA 191 Group Dynamics	■ ■ ■ ■ ■	1
TOTAL CREDITS REQUIRED FOR CERTIFICATE		29

NOTATIONS:

- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

MECHANICAL DESIGN TECHNOLOGY

Associate in Applied Science Degree

As a mechanical design technician, you will assist engineers in design and development work. This program is designed to equip you with one of the most sought-after technical skills in this area - mechanical drafting and CAD. In addition to placing lines on the drawing board or on the computer screen, however, the designer requires a broad technical knowledge to be able to select a solution to a problem from many alternatives. The largest employers are the electrical equipment, chemicals, machinery, manufacturing, and aerospace industries. In the non-manufacturing area the major employers are communications, engineering and architectural firms.

General Education Courses

	Suggested Sequence	Sem Hrs
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing	□ ■ □ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
MTH 103 Applied Geometry and Trigonometry OR		
MTH 113 Applied Trigonometry	□ ■ □ □	4
MTH 111 Applied Algebra OR		
MTH 119 Intermediate Algebra	■ ■ □ □	4
PHY 111 General Physics I	■ ■ □ □	4
POL 103 Introduction to American Government	■ ■ ■ ■	3
SUBTOTAL		23

Technical Courses

CAD 114 AutoCAD Introduction	■ □ □ □	2
CAD 214 AutoCAD Effective Techniques	□ □ ■ □	2
DRF 104 Basic Mechanical Design OR		
DRF 105 Beginning Mechanical Design	■ □ □ □	4/3
DRF 107 Intermediate Mechanical Design	□ ■ □ □	3
DRF 128 Geometric Tolerancing	□ ■ □ □	2
DRF 256 Descriptive Geometry	□ □ ■ □	3
DRF 257 Advanced Mechanical Design	□ □ ■ ■	4
EET 235 Electrical Circuits	□ □ ■ ■	3
MDA 205 Rapid Prototyping & Tooling	■ ■ ■ ■	.6
MDA 211 Interactive Part Modeling	■ ■ ■ ■	2.4
MFG 111 Manufacturing Process	■ ■ ■ ■	3
MS 113 Machining Processes	■ ■ ■ ■	2
MT 220 Introduction to Fluid Power	□ □ ■ ■	3
MT 221 Materials and Metallurgy	□ □ ■ ■	3
MT 250 Statics & Strength of Materials	□ □ ■ ■	3
MT 255 Kinematics of Mechanisms	□ □ ■ ■	3
SUBTOTAL		42/43

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 65/66

NOTATIONS:

1. This program is designed to prepare you for a technical-level career upon graduation from Delta College and is not transferable into a Mechanical Engineering Baccalaureate degree.
2. If you want to become a mechanical engineer, you are advised to consult with a counselor about transfer requirements.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

MECHANICAL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

The objective of this program is to provide you with a sufficient broad base in the fundamentals of mechanical technology, drafting, CAD, manufacturing and design to be successful as a mechanical engineering technician in a metallurgical or product test laboratory, as a field technician, as an engineering aide in manufacturing or product engineer, in quality control, or in sales and service. Responsibilities as a lab technician may include not only setting up a test apparatus and running tests on an experimental product, but also writing the report and making recommendations. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. Accreditation by TAC/ABET expands your marketability nationally as engineering technician upon graduation.

	Suggested Sequence	Sem Hrs
General Education Courses		
ENG 111 College Composition I	■ □ □ □	3
ENG 113 Technical Writing	□ ■ □ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
MTH 113 Applied Trigonometry OR		
MTH 121 Plane Trigonometry	■ □ □ □	4/3
MTH 211 Applied Calculus	□ ■ □ □	5
PHY 111 General Physics I	□ ■ □ □	4
POL 103 Introduction to American Government	■ ■ ■ ■	3
# --- Approved Science Elective	□ ■ □ □	4
A --- Social Science/Humanities Elective	■ ■ ■ ■	5
SUBTOTAL		32/33

Approved Science Electives (select one):

BIO 111 Principles of Biology	
BIO 120 Introduction to Environmental Studies	
CHM 101 General Chemistry I	
CHM 111 General/Inorganic Chemistry I	
GLG 111 Physical Geology	
PHY 112 General Physics II	

A Suggested Social Science/Humanities Electives (select two):

ECN 221 Principles of Economics I	
PHL 213 Introduction to Ethics	
PHL 203 Business Ethics	
PSY 101 Applied Psychology	
SOC 211 Principles of Sociology	
SOC 265 Third World Development	
SPH 112 Fund. Oral Communication	
SPH 114 Interpersonal Communication	

Technical Courses

CAD 114 AutoCAD Introduction	■ □ □ □	2
DRF 104 Basic Mechanical Design OR		
DRF 105 Beginning Mechanical Design	■ □ □ □	4/3
DRF 107 Intermediate Mechanical Design	□ ■ □ □	3
DRF 128 Geometric Tolerancing	□ □ □ □	2
EET 235 Electrical Circuits	□ □ ■ ■	3
MDA 205 Rapid Prototyping & Tooling	■ ■ ■ ■	.6
MDA 211 Interactive Part Modeling	■ ■ ■ ■	2.4
MFG 111 Manufacturing Process	■ ■ □ □	3
MS 113 Machining Processes	■ ■ ■ ■	2
MT 220 Introduction to Fluid Power	□ □ ■ ■	3
MT 221 Materials and Metallurgy	□ □ ■ ■	3
MT 244 Mechanisms	□ □ □ □	2
MT 251 Statics and Dynamics	□ □ □ □	3
MT 252 Strength of Materials	□ □ ■ ■	3
MT 256 Machine and Product Design	□ □ □ □	3
SUBTOTAL		38/39

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 70/72

NOTATIONS:

1. This program is designed to prepare you for a technical-level career upon graduation from Delta College and is transferable into a Baccalaureate technology degree program but not an engineering degree program.
2. Students wanting to become mechanical engineers are advised to consult with a counselor about transfer college requirements and follow the Delta College pre-engineering program.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify curriculum requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

MEDICAL ASSISTING

Associate in Applied Science Degree

As a Medical Assistant, you will help physicians examine and treat patients and take care of the clerical work necessary to have a smoothly run office. In helping physicians examine patients, you may check weight, height, temperature, and blood pressure, and make simple laboratory tests. In helping with treatment, you will instruct patients about medication and self-treatment at home, give injections, apply bandages, and take electrocardiograms. Clerical duties are varied but likely to include: processing insurance forms, typing, patient billing and payment records management, scheduling appointments and handling correspondence.

The American Association of Medical Assistants (AAMA) sponsors a certification program and its certifying board awards certificates to medical assistants who pass a comprehensive written examination. Other eligibility requirements to take the certification exam are available from your counselor. Certification is not a license and is not required for AAMA membership; however, physicians usually consider Certified Medical Assistants to be highly qualified assistants.

Non Clinical Courses

	Suggested Sequence	Sem Hrs
# *BIO 101 Introduction to Anatomy and Physiology	■ □ □ □	4
# *BIO 102 Microbiology and Infection Control	■ □ □ □	2
# *HSC105 Medical Terminology	■ □ □ □	2
*HSC140 Basic Medical Emergencies	□ ■ ■ ■	2
*HSC205 Legal Aspects of Health Care	□ ■ ■ ■	2
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
# *MTH117 Mathematics for Allied Health	■ □ □ □	2
# *OSE116 Introduction to the Medical Office	■ □ □ □	2
*OSE151 Business Communication I	■ ■ □ □	3
*OSE152 Business Communication II	□ ■ ■ ■	3
*OSE155 Editing	■ ■ ■ □	2
*OSE171 Document Processing: Beginning	■ ■ □ □	3
*OSE254 Medical Insurance I	□ □ ■ ■	3
*OSE255 Medical Insurance II	□ □ ■ ■	3
*OSE266 Medical Office Practices	□ □ ■ ■	3
*OSE276 Machine Transcription/Medical	□ □ ■ ■	3
POL103 Introduction to American Government	■ ■ ■ ■	3
PSY101 Applied Psychology OR		
SPH114 Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL		47

Prior to attempting to register to begin the clinical sequence you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 33 of this catalog for the required procedures.

#You may apply for validation during the semester you are completing these 12 credits.

Clinical Courses

*MA 205 Medical Office Pharmacology	□ □ ■ □	1
*MA 206 Pharmacology Applications	□ □ ■ □	1
*MA 210 Assisting the Physician I	□ ■ ■ □	4
*MA 220 Assisting the Physician II	□ □ ■ □	4
*MA 230 Medical Assistant Internship	□ □ ■ ■	5
SUBTOTAL		15
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Prior to MA 230, you must submit proof of Hepatitis B vaccine immunization or you must submit a signed waiver form.
- 2. Before beginning MA 230 you must have the Delta College Health Appraisal completed, including a negative TB test. You must also possess current Professional (2-person) CPR certification.
- 3. OSE 151: Typewritten assignments required; credit by exam available.
- 4. See page 94 for graduation requirements.
- 5. Delta College reserves the right to modify program requirements.
- 6. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

MEDICAL SECRETARY

Associate in Business Studies Degree

The efficiency of a medical office and the quality of medical care provided depend in large part upon the office staff members, who supplement and support the role of the physician. As a medical office staff member, you must have strong communication skills, organizational ability, computer knowledge and excellent human relations skills.

While completing this degree program, you will be trained to understand and use medical terminology, to complete health insurance claims, to handle correspondence, to work with medical records, to transcribe medical dictation, to work with appointment schedules and the telephone, and to understand the legal implications of your roll as medical secretary.

	Suggested Sequence	Sem Hrs
General Education Courses		
BIO 101 Introduction to Anatomy and Physiology	■ ■ □ □	4
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
PSY 101 Applied Psychology OR		
SPH 114 Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL		12

Basic Program Requirements

GB 153 Introduction to Business	■ ■ ■ □	3
HSC 105 Medical Terminology	■ □ □ □	2
HSC 205 Legal Aspects of Health Care	□ ■ □ □	2
MA 205 Medical Office Pharmacology	□ ■ ■ □	1
OSE 116 Introduction to the Medical Office	■ ■ □ □	2
OSE 145 Integrated Office Systems	■ ■ □ □	4
* OSE 151 Business Communication I	■ ■ □ □	3
* OSE 152 Business Communication II	□ ■ ■ □	3
OSE 155 Editing	■ ■ ■ □	2
OSE 157 Filing	■ ■ □ □	2
OSE 172 Document Processing: Intermediate	■ ■ □ □	3
OSE 175 Machine Calculation	■ ■ ■ □	1
* OSE 254 Medical Insurance I	□ □ □ □	3
* OSE 255 Medical Insurance II	□ □ □ □	3
* OSE 266 Medical Office Practices	□ □ □ □	3
* OSE 273 Document Processing: Advanced	□ □ ■ ■	3
* OSE 276 Machine Transcription/Medical	□ □ ■ ■	3
--- --- Electives	■ ■ ■ ■	7
SUBTOTAL		50
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Credit by exam is available for OSE 151, OSE 157, OSE 172, and OSE 175.
- 2. Electives may be substituted upon demonstration of equivalent skills for OSE 172.
- 3. Typewritten assignments are required for OSE 151 Business Communication I.
- 4. A knowledge of general math is required for OSE 175 Machine Calculation.
- 5. OSE 171 and beginning WordPerfect for Windows background is a prerequisite for OSE 172, and OSE 172 and intermediate WordPerfect for Windows background is a prerequisite for OSE 273.
- 6. See page 94 for graduation requirements.
- 7. Delta College reserves the right to modify program requirements.
- 8. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

NURSING RN PROGRAM

Associate in Applied Science Degree

The R.N. program prepares you to function effectively as a member of the health care team. As a graduate nurse, you will be qualified for employment in structured settings; for example, acute care hospitals, extended care facilities, nursing homes, clinics. Upon successfully completing this Program, you are eligible to take the Registered Nurse licensure exam. This Delta College Program is accredited by the National League for Nursing and approved by the Michigan Board of Nursing.

			Suggested Sequence	Sem Hrs
General Education Courses				
1,4	*BIO 131	Anatomy and Physiology I	■ ■ □ □	4
1,4	*BIO 132	Anatomy and Physiology II	□ ■ ■ □	4
1,4	*BIO 203	General Microbiology	□ □ ■ ■	4
4	*ENG 111	College Composition I	■ □ □ □	3
4	*ENG 112	College Composition II	□ ■ ■ □	3
4	LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
4	LW ---	Lifelong Wellness Elective	■ ■ ■ ■	1
11,4	*NUR 100	Introduction to Health Care: Nursing	■ ■ ■ □	2
4	*PHL 215	Health Care Ethics OR		
4	*PHL 230	Bioethics	□ ■ ■ ■	3/2
4	POL 103	Introduction to American Government	■ ■ ■ ■	3
4	PSY 211	General Psychology	■ ■ ■ ■	4
4	SOC 211	Principles of Sociology	■ ■ ■ ■	3
SUBTOTAL				34/35

RECOMMENDED PREPARATORY CLASSES:

11	MTH 117	Introduction to Health Care: Nursing	2
	NUR 285	Pharmacology, A Nursing Perspective	4

Clinical Program Requirements

*NUR101A	Nursing Fundamentals	■ □ □ □	5
*NUR101B	Care of Aging Adult	■ □ □ □	4
*NUR115	Maternity Nursing	□ ■ □ □	3
*NUR116	Pediatric Nursing	□ ■ □ □	3
*NUR119	Mental Health Nursing	□ ■ □ □	3
*NUR240	Basic Nursing Care of the Adult Client	□ □ ■ □	9
*NUR250	Nursing Care and Management Through the Health Continuum	□ □ □ ■	9
*PHL231A,B,C	Bioethics: Application for Nurses	□ ■ ■ ■	1
(Integrated over last 3 semesters)			
SUBTOTAL			37
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			71/72

NOTATIONS:

* A "C" (2.0) or better minimum grade required in each asterisked course.

- It is strongly recommended that BIO 131, 132 and 203 be completed within five years of entry into the clinical nursing sequence. Please see nursing counselor to discuss options.
- Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 33 of this catalog for the required procedures.
- Prior to enrolling in BIO 131, you must either pass the BIO 130 Challenge Exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the Challenge Exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives tested is available for you to review in the Counseling Center.
- Prerequisite qualifications are: (a) be admitted to Delta College (b) provide transcripts from high school and all other colleges or training institutions attended (c) completion, with a "C" (2.0) minimum grade in each of the following courses: BIO 131, BIO 132, BIO 203, ENG 111, ENG 112, and NUR 100, and PHL 215 or PHL 230 (d) completion with a "C" (2.0) grade average in 6 credits from the remaining general education courses listed. To graduate, all general education requirements listed above must be completed.

- Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- First semester nursing courses are offered Fall and Winter Semesters only.
- You must achieve a minimum "C" (2.0) grade in each nursing course to continue in the program and to graduate from the program. You must comply with all Nursing Program progression and retention policies.
- Program Entry Health Requirements:** You must submit an up-to-date complete physical examination report to the Delta Health Office prior to entrance into the first clinical course. As a clinical student, you are required to have a physical exam and TB skin test done annually. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957 documentation of immunization for MMR must be provided. Evidence of current (within ten years) Td immunization status required.
- C.P.R Training:** Entering clinical courses, you must have a CPR card that must remain current throughout the clinical program. Training may be obtained through the Red Cross, Delta College, your local Community Education, or Hospital Education Department. A photocopy of your certificate must be turned in to the Nursing Division Office prior to the start of classes. The CPR certification, known as Professional Rescuers CPR, must include one- and two-person rescuer, infant rescuer and airway obstruction relief. Students with expired CPR certification, TB test, and/or physical exam will be removed from the clinical sequence.
- In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, and transportation to clinical settings, including possible hospital parking charges.
- In order to validate beginning Fall 1999, competency must be demonstrated by completion of MTH 117 with minimum "C" grade or pass math competency exam - offered through the Assessment/Testing Office 686-9338, D-101. This is necessary because each nursing course requires demonstration of math competencies necessary for safe medication administration.**
- You will receive a Nursing Student Handbook upon entering the clinical nursing sequence, which contains additional information, requirements and specific program policies that you must comply with.
- Clinical nursing courses are demanding and intensive. It is recommended that you prepare for this level of involvement by taking at least one semester of full-time study in pre-clinical courses prior to entry into clinical sequence.
- Any student with a previous or current felony conviction must inform the Nursing Division Chairperson and/or nursing counselor of said conviction. Students should be aware that a felony conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. The admittance to and/or continuation in a clinical sequence may be affected by a felony conviction. Students should be aware that the current licensure application form now requests the following information:
 - History of felony conviction(s).
 - History of conviction of a misdemeanor punishable by imprisonment for a maximum of two years.
 - History of conviction of a misdemeanor involving illegal delivery, possession or use of alcohol or a controlled substance (including motor vehicle violations).
 - Treatment for substance abuse in past two years.
 - History of malpractice settlements, awards or judgments.
 - Previous application for licensure/or NCLEX in Michigan or other jurisdictions.
 - History of revoked, suspended, or denied licensure or registration, or other disciplinary action taken or presently pending.
 Questions may be directed to the Michigan Board of Nursing, (517) 335-0918.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

NURSING LPN-RN TRANSITION TRACK

Associate in Applied Science Degree

Delta College offers a special track Associate Degree program for current Licensed Practical Nurses (LPN) with 1 year full-time equivalent work experience. Good basic mathematical skills are required—refer to notation number 12.

The R.N. program prepares you to function effectively as a member of the health care team. As a graduate nurse, you will be qualified for employment in structured settings; for example, acute care hospitals, extended care facilities, nursing homes, clinics. Upon successfully completing this Program, you are eligible to take the Registered Nurse licensure exam. This Delta College Program is accredited by the National League for Nursing and approved by the Michigan Board of Nursing.

	Suggested Sequence	Sem Hrs
General Education Courses		
1, 5 *BIO130 Introduction Chemistry and Cellular Biology	■ □ □ □	3
2, 5 *BIO131 Anatomy and Physiology I	■ ■ □ □	4
2, 5 *BIO132 Anatomy and Physiology II	□ ■ ■ □	4
2, 5 *BIO203 General Microbiology	□ □ ■ ■	4
5 *ENG111 College Composition I	■ □ □ □	3
5 *ENG112 College Composition II	□ ■ ■ □	3
5 LW- - Lifelong Wellness Elective	■ ■ ■ ■	1
5 LW- - Lifelong Wellness Elective	■ ■ ■ ■	1
5 *PHL215 Health Care Ethics OR		
5 *PHL230 Bioethics	□ ■ ■ ■	3/2
5 POL103 Introduction to American Government	■ ■ ■ ■	3
5 PSY211 General Psychology	■ ■ ■ ■	4
5 SOC211 Principles of Sociology	■ ■ ■ ■	3
SUBTOTAL		35/36

RECOMMENDED PREPARATORY CLASSES:

12 MTH 117 Introduction to Health Care: Nursing	2
NUR 285 Pharmacology, A Nursing Perspective	4

	Suggested Sequence	Sem Hrs
Clinical Program Requirements		
* NT 161 Transition-Basic Principles of Adult Care	■ □ □ □	2
* NT 162 Role and Function of the RN	■ □ □ □	2
* NT 163 Advanced Principles of Adult Care for the LPN	□ ■ □ □	5
* NT 215 Transition-Maternity Nursing	□ □ □ □	3
* NT 216 Transition-Pediatric Nursing	□ □ □ □	3
* NT 219 Transition-Mental Health Nursing	□ □ □ □	3
* NUR 250 Nursing Care and Management Throughout the Health Continuum	□ □ □ ■	9
* PHL 231 A, B, C Bioethics: Application for Nurses	■ ■ ■ ■	1
(Integrated over last 3 semesters)		
SUBTOTAL		28
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62/63

NOTATIONS:

* A "C" (2.0) or better minimum grade required in each asterisked course.

- Students must either pass the BIO 130 CHALLENGE EXAM for credit or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the CHALLENGE EXAM reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives being tested is available for students to review in the Counseling Center.
- It is strongly recommended that BIO 131, 132 and 203 be completed within five years of entry into the clinical nursing sequence. Please see nursing counselor to discuss options.
- Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 33 of this catalog for the required procedures.
- Only currently licensed LPN's have the option to take the LPN-RN Transition Track leading to RN licensure. Proof of current LPN licensure must be provided to Records & Registration at the time of validation. **A minimum of one-year full-time equivalent work experience required before entering**

into clinicals. If interested in this option, you should make an appointment with the nursing counselor or academic advisor in the Counseling Center.

- Prerequisite qualifications are: (a) be admitted to Delta College (b) provide transcripts from high school and all other colleges or training institutions attended (c) completion, with a "C" (2.0) minimum grade in each of the following courses: BIO 130, BIO 131, BIO 132, BIO 203, ENG 111, ENG 112, PHL 215 or 230 (d) completion with a "C" (2.0) grade average in 6 credits from the remaining general education courses listed. To graduate, all general education requirements listed above must be completed.
- Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- First semester Transition Clinical Nursing courses (NT 161 and NT 162) will be offered Winter semester only. NT 163 is offered in the Spring. NT 215, 216, and 219 are offered in the Fall.
- You must achieve a minimum "C" (2.0) grade in each nursing course to continue in the program and to graduate from the program. You must comply with all Nursing Program Progression and Retention Policies.
- Program Entry Health Requirements:** You must submit an up-to-date complete physical examination report to the Delta Health Office prior to entrance into the first clinical course. As a clinical student, you are required to have a physical exam and TB skin test done annually. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957 documentation of immunization for MMR must be provided. Evidence of current (within ten years) Td immunization status required.
- C.P.R Training:** Entering clinical courses, you must have a CPR card which must remain current throughout the clinical program. Training may be obtained through the Red Cross, Delta College, your local Community Education, or Hospital Education Department. A photocopy of your certificate must be turned in to the Nursing Division Office prior to the start of classes. The CPR certification, known as Professional Rescuers CPR, must include one- and two-person rescuer, infant rescuer and airway obstruction relief. Students with expired CPR certification, TB test, and/or physical exam will be removed from the clinical sequence.
- In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes and transportation to clinical agency settings, including possible hospital parking charges.
- In order to validate beginning Fall 1999, competency must be demonstrated by completion of MTH 117 with "C" grade minimum or pass math competency exam - offered through the Assessment/Testing Office 686-9338, D-101. This is necessary because each nursing course requires demonstration of math competencies necessary for safe medication administration.
- You will receive a Nursing Student Handbook upon entering the clinical nursing sequence, which contains additional information, requirements and specific program policies that you are required to comply with.
- Clinical nursing courses are demanding and intensive. It is recommended that you prepare for this level of involvement by taking at least one semester of full-time study in pre-clinical courses prior to entry into clinical sequence.
- Any student with a previous or current felony conviction must inform the Nursing Division Chairperson and/or nursing counselor of said conviction. Students should be aware that a felony conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. The admittance to and/or continuation in a clinical sequence may be affected by a felony conviction. Students should be aware that the current licensure application form now requests the following information:
 - History of felony conviction(s).
 - History of conviction of a misdemeanor punishable by imprisonment for a maximum of two years.
 - History of conviction of a misdemeanor involving illegal delivery, possession or use of alcohol or a controlled substance (including motor vehicle violations).
 - Treatment for substance abuse in past two years.
 - History of malpractice settlements, awards or judgments.
 - Previous application for licensure/or NCLEX in Michigan or other jurisdictions.
 - History of revoked, suspended, or denied licensure or registration, or other disciplinary action taken or presently pending.
 Questions may be directed to the Michigan Board of Nursing, (517) 335-0918.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

OFFICE PROFESSIONS

OPTIONS: OFFICE ASSISTANT OFFICE SPECIALIST ADMINISTRATIVE ASSISTANT

Associate in Business Studies Degree/Certificate

Office professions continue to evolve along with new office automation and organizational restructuring. In many cases, office professionals have assumed new responsibilities and learned to operate a variety of office equipment. Most organizations employ office professionals to perform and coordinate office activities and to ensure that information gets disseminated to staff and clients. Managers, professionals, and other support staff rely on them to keep administrative operations under control.

Office professionals are responsible for a variety of clerical and administrative duties that are necessary to run and maintain organizations efficiently. They increasingly use personal computers to communicate electronically and to run spreadsheet, word processing, data base management, desktop publishing, and graphics programs.

Administrative assistants perform fewer clerical tasks than lower-level office professionals. In addition to receiving visitors, arranging conference calls, and answering letters, they may handle more complex responsibilities such as conducting research, preparing statistical reports, and supervising other clerical staff.

	Suggested Sequence	Sem Hrs
Office Skills Core (see Notation #4)		
OSE 105 Time Management	■ □ □ □	1
2, 3* OSE 150 Business English	■ □ □ □	3
1 OSE 157 Filing	■ □ □ □	2
1, 6* OSE 171 Document Processing: Beginning	■ □ □ □	3
1 OSE 175 Electronic Calculation	■ □ □ □	2
OSE 194 Windows 95	■ □ □ □	1
SUBTOTAL		12

The following certificates have been ladderred (sequenced) to lead to the completion of the associate degree:

Requirements for Office Assistant Certificate

	Office Skills Core	12
1,2,8*	OSE 151 Business Communication I	3
1*	OSE 172 Document Processing: Intermediate	3
	OSE 201 Presentation Graphics Using PowerPoint	2
	CIS 132 Spreadsheet Fundamentals	2
1	GB 153 Introduction to Business	3
TOTAL CREDITS REQUIRED/OFFICE ASSISTANT CERTIFICATE		25

Requirements for Office Specialist Certificate

	Office Assistant Certificate	25
	CIS 260 Database MS Access	3
8*	OSE 152 Business Communication II	3
1	OSE 155 Editing	2
1,7*	OSE 192 WordPerfect for Windows: Beginning	1
1,7*	OSE 193 WordPerfect for Windows: Intermediate	2
	OSE 195 Desktop Publishing - Pagemaker	2
12	OSE 285 Office Technology	3
10, 11	OSE 166 Office Externship	3
TOTAL CREDITS REQUIRED/OFFICE SPECIALIST CERTIFICATE		44

Requirements for Administrative Assistant Degree

Office Specialist Certificate	44
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General Education Courses

LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government	■ ■ ■ ■	3
SPH 112 Fundamentals of Oral Communication OR		
5 SPH 114 Interpersonal Communication OR		
PSY 101 Applied Psychology	■ ■ ■ ■	3
SUBTOTAL		8

Other Requirements

ACC 111 Introductory Accounting OR		
5 ACC 211 Principles of Accounting I	□ □ □ ■	4
9* OSE 268 Professional Office Procedures	□ □ □ ■	3
* OSE 273 Document Processing: Advanced	□ □ □ ■	3
SUBTOTAL		10
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Credit by examination is available for OSE 151, OSE 155, OSE 157, OSE 171, OSE 172, OSE 175, GB 153, OSE 192, and OSE 193.
- 2. OSE 151 Business Communication I may be substituted for OSE 150 Business English with satisfactory assessment testing score. (40 or higher on ASSET; 65 or higher on COMPASS)
- 3. If OSE 150 is not required, three credits of electives must be taken to complete the Office Assistant certificate.
- 4. Upon successful completion of the Office Skills Core, you will receive a certificate of completion. This should not be confused with completing a certificate program at Delta. Application may be made to the Business Division Office, F-34.
- 5. If you are planning to transfer, you should select SPH 114 and ACC 211.
- 6. OSE 171 may be waived with evidence of high school articulation.
- 7. Students who have used WordPerfect for Windows in the document processing classes (OSE 171, 172, 273) should substitute OSE 212 (Microsoft Word: Beginning) and OSE 213 (Microsoft Word: Intermediate) for OSE 192 and OSE 193.
- 8. Keyboarded assignments required for OSE 151 Business Communication I and OSE 152 Business Communication II.
- 9. OSE 151, OSE 172, CIS 132, and CIS 260 are prerequisites for OSE 268 Professional Office Procedures.
- 10. Students must apply for placement in OSE 166 Office Externship in semester previous to anticipated placement.
- 11. CED 165 Cooperative Education may be substituted for OSE 166 Office Externship. Call the Co-op Office at 686-9474.
- 12. On-site visitations required in OSE 285 Office Technology.
- 13. See page 94 for graduation requirements.
- 14. Delta College reserves the right to modify programs requirements.
- 15. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Associate in Applied Science Degree-Health Care Services Paramedic

As a paramedic working under the direction of a physician (often through radio communication), you recognize, assess, and manage medical emergencies of acutely ill or injured patients in prehospital care settings. You work principally in advanced life-support units, hospital emergency rooms, and ambulance services under medical supervision.

	Suggested Sequence	Sem Hrs
General Education Courses		
CIS 114 Computer Fundamentals/IBM	■ ■ ■ ■	1
ENG111 College Composition 1	■ ■ ■ ■	3
4 ENG112 College Composition 2 OR		
ENG113 Technical Writing	■ ■ ■ ■	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
MTH107 Algebra 1 OR		
4 MTH119 Intermediate Algebra	■ ■ ■ ■	3/4
4 PHL215 Health Care Ethics OR		
PHL230 Bioethics	■ ■ ■ ■	3/2
POL103 Introduction to American Government	■ ■ ■ ■	3
PSY101 Applied Psychology OR		
4 PSY211 General Psychology	■ ■ ■ ■	3/4
SOC275 Sociology of Stress OR		
4 SOC211 Principles of Sociology	■ ■ ■ ■	3
SPH114 Interpersonal Communications	■ ■ ■ ■	3
SUBTOTAL		26/29

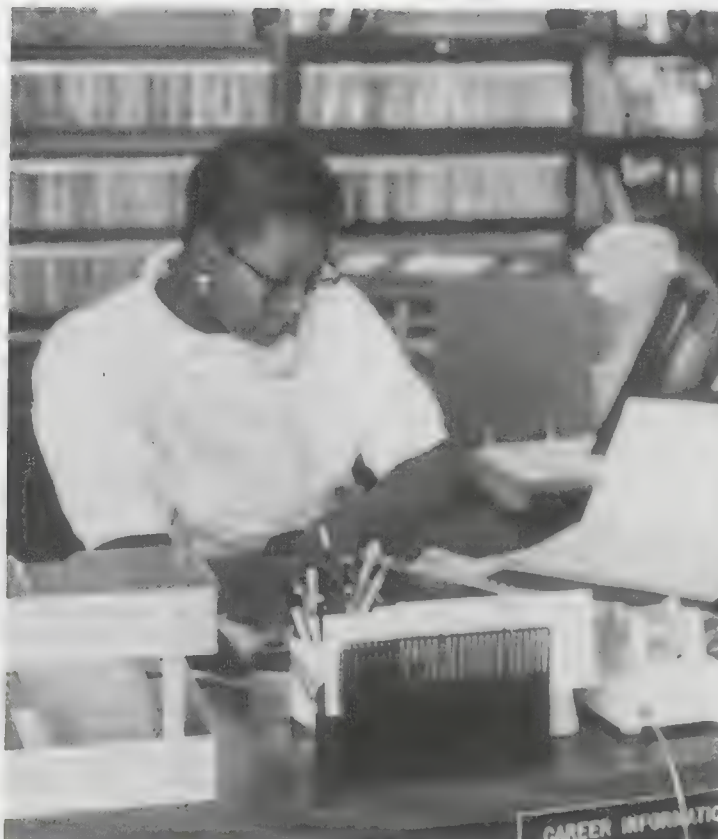
Additional Program Requirements

3 Experience (Paramedic; Certification/License/Training)	30
Complete additional 9 credit hours to be selected from courses listed below:	
BIO 102 Microbiology and Infection Control	2
GB 153 Introduction to Business	3
GB 245 Principles of Management	3
GB 251 Business Law I	3
SOC 245 Death Education	3
SPA 105 Conversational Spanish - Introduction OR	
SPA 107 Spanish for Medical Personnel	2/1

TOTAL CREDITS REQUIRED/ASSOCIATE DEGREE 65/68

NOTATIONS:

1. See page 94 for graduation requirements.
2. Delta reserves the right to modify program requirements.
3. Students may be granted 30 credits for a current Paramedic License in the State of Michigan accepted as State-certified training applicable to the Health Care Services (Paramedic) occupational curricula at Delta College as approved by the Delta College Health and Wellness Division Chair.
4. These general education options are recommended for transfer.



PHYSICAL THERAPIST ASSISTANT

Associate in Applied Science Degree

Delta's program is for the training of Physical Therapist Assistants only. If you are planning to become a Physical Therapist, you should follow the Pre-Physical Therapy program guide sheet available in Delta's Counseling Center.

As a Physical Therapist Assistant you will work under the direction and supervision of Physical Therapists. Such settings include: Acute care hospitals, rehabilitation centers, school systems, nursing homes, home care, out-patient facilities, private clinics, and specialty clinics. As a graduate of this program, you will be able to carry out patient treatment programs designed by the Physical Therapist which utilize heat, cold, light, sound, massage, therapeutic exercise, aquatics, manual therapy, and rehabilitation procedures.

	Suggested Sequence	Sem Hrs
General Education Courses		
* BIO 131 Anatomy and Physiology I	■ ■ ■ ■	4
* BIO 132 Anatomy and Physiology II	■ ■ ■ ■	4
ENG111 College Composition I	■ ■ ■ ■	3
ENG112 College Composition II	■ ■ ■ ■	3
* HSC105 Medical Terminology	■ ■ ■ ■	2
12 LW - - Lifelong Wellness Elective	■ ■ ■ ■	1
12 LW - - Lifelong Wellness Elective	■ ■ ■ ■	1
POL103 Introduction to American Government	■ ■ ■ ■	3
PSY211 General Psychology	■ ■ ■ ■	4
* SPH114 Interpersonal Communications	■ ■ ■ ■	3
PHL215 Health Care Ethics	■ ■ ■ ■	Choose One
PSY223 Child Psychology	■ ■ ■ ■	3
PSY231 Psychology of Personality	■ ■ ■ ■	3
PSY241 Abnormal Psychology	■ ■ ■ ■	3
SOC275 Sociology of Stress	■ ■ ■ ■	3
SUBTOTAL		31

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs," including observation requirements, and be officially validated. See page 33 of this catalog for the required procedures.

Clinical Course Sequence

Semester 1 (Fall)

*PTA 101 Clinical Anatomy I	■ ■ ■ ■	2
*PTA 105 Modalities I/Clinic I	■ ■ ■ ■	6
*PTA 110 Therapeutic Exercise I	■ ■ ■ ■	3
SUBTOTAL		11

Semester 2 (Winter)

*PTA 102 Clinical Neuroanatomy	■ ■ ■ ■	2
*PTA 120 Therapeutic Exercise 2	■ ■ ■ ■	2
*PTA 121 Human Growth and Development	■ ■ ■ ■	2
*PTA 123 Clinical Medicine I	■ ■ ■ ■	3
*PTA 124 P.T.A. Clinic 2	■ ■ ■ ■	2
*PTA 125 Measurement Techniques	■ ■ ■ ■	3
SUBTOTAL		14

Semester 3 (Fall)

*PTA 205 Modalities II	■ ■ ■ ■	2
*PTA 210 Therapeutic Exercise 3	■ ■ ■ ■	2
*PTA 213 Clinical Medicine II	■ ■ ■ ■	1
*PTA 214 P.T.A. Clinic 3	■ ■ ■ ■	3
*PTA 215 Rehabilitation Programs	■ ■ ■ ■	1
SUBTOTAL		9

"Counselor's Quote"

Judy Shearer, Pinconning High School

"I find the staff at Delta to be accessible. The counselors are also responsive when I call with questions regarding my students. Delta College's publications are helpful, informative, and easy to read. I encourage our seniors to use the Career Center at Delta College to investigate possible career choices."

Semester 4 (Winter)

*PTA 220 Chest Physical Therapy	■ ■ ■ ■	1
*PTA 221 Clinical Seminar	■ ■ ■ ■	2
*PTA 224 P.T.A. Clinic 4	■ ■ ■ ■	9
SUBTOTAL		12
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		77

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

- A maximum of 30 students will be accepted each Fall semester for Physical Therapist Assistant courses. The procedures for application into the P.T.A. Program are in the guidelines for validation which are in the Counseling Center and on page 33 of this catalog. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- Prerequisite qualifications are: High school graduate or GED equivalent; completion, with a C (2.0) minimum grade in each, HSC 105, SPH 114, BIO 131 & 132; and completion, with a C (2.0) grade average of at least 6 credits from the remaining general education courses listed; provide transcripts from high school and all other colleges attended; be admitted to Delta College.
- Prior to enrolling in BIO 131, you must take BIO 130 or pass the BIO 130 challenge exam. Math skills through Algebra are a must.
- Physical Therapist Assistant courses are offered day hours only and must be taken in the sequence shown.
- You must achieve a minimum C (2.0) grade in each Physical Therapist Assistant course to be eligible to continue in the program.
- In addition to tuition, fees, and textbook costs, you must purchase lab coats, clinic shoes, name tags, registration fees for conferences, provide your transportation to clinical settings (plus possible hospital parking charges), field trips and National Association membership dues.
- After notification is received for validation, you must have a complete physical examination including a negative TB test or a physician's release form. An annual negative TB test is required.
- Current CPR certification is required for admission to the clinical sequence. Current CPR certification must be maintained throughout the program.
- Proof of Hepatitis B vaccination or signed waiver is required for admission to clinical sequence.
- An observation series is also required. Before you finish your prerequisites you must observe two different PTs or PTAs performing their skills in two different offices for a minimum of 8 hours each. These observations must be documented on the Observation Form which can be picked up in the Counseling Office. These forms must then be turned into the Records and Registration Office, with your Validation Application.
- You need to be aware that clinical hospital assignments may be outside the Tri-county area.
- Highly recommended: LW 181 Adapted Aquatic Aide and LW 225 Lifelong Wellness.
- Student Re-entry procedures are printed in the handbook given to all clinical students.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

PRACTICAL NURSE

Certificate Program

The P.N. clinical coursework is an intense FULL-TIME three semesters that will require college-level reading, writing, and applied math skills.

	Suggested Sequence	Sem Hrs
Basic Program Requirements - Pre-Clinical		
2,3,4* BIO130 Introduction to Chemistry & Cell Biology	■ □ □ □	3
2,3,4* BIO131 Anatomy & Physiology I	□ ■ □ □	4
2,4* BIO132 Anatomy & Physiology II	□ □ ■ □	4
4* ENG 111 College Composition I	■ □ □ □	3
4* HSC 105 Medical Terminology	■ □ □ □	2
4* MTH 117 Math for Allied Health	■ □ □ □	2
4* NUR 100 Introduction to Health Care/Nursing	□ ■ ■ ■	2
SUBTOTAL		20

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 33 of this catalog for the required procedures.

Clinical Course Work

* PNE101 Fundamentals of Practical Nursing	■ □ □ □	8
* PNE110 Principles of Pharmacology for PN	■ □ □ □	1
* PNE102 Care of Adult I	□ ■ □ □	8
* PNE103 Maternal Child Care Nursing	□ □ ■ □	5
* PNE104 Care of Adult II	□ □ ■ □	8
SUBTOTAL		30

Recommended Preparatory Classes - See course description for prerequisites

* BIO 203 General Microbiology	□ □ □ ■	4
1*NUR 285 Pharmacology: A Nursing Perspective	□ □ □ ■	4
SUBTOTAL		8
TOTAL CREDITS REQUIRED/CERTIFICATE		50

NOTATIONS:

- * A "C" (2.0) minimum grade is required for each asterisked course.
- 1. If NUR 285 is passed with a minimum of "C" grade, PNE 110 will be waived.
- 2. It is strongly recommended that BIO 130, 131, and 132 be completed within five years of entry into the clinical nursing sequence. Please see nursing counselor to discuss options.
- 3. Prior to enrolling in BIO 131, you must either pass the BIO 130 Challenge Exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the Challenge Exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives tested is available for you to review in the Counseling Center.
- 4. Prerequisite qualifications for validation are: (a) be admitted to Delta College, (b) provide transcripts from high school and all other colleges or training institutions attended, (c) completion, with a "C" (2.0) minimum grade in each of the following courses: BIO 130, BIO 131, BIO 132, ENG 111, HSC 105, MTH 117, and NUR 100.
- 5. Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- 6. First semester nursing courses are offered Fall Semester only.
- 7. You must achieve a minimum "C" (2.0) grade in each nursing course to be eligible to continue in the program and to graduate from the program. You must comply with all Nursing Program Progression and Retention Policies.

8. **Program-Entry Health Requirement:** You must submit an up-to-date complete physical examination report to the Delta College Health Office prior to entrance into the first clinical course. As a clinical student, you are required to have a physical exam and TB skin test done annually. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. An annual TB skin test is required. A positive TB test will require a recent chest x-ray. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957 documentation of immunization for MMR must be provided. Evidence of current (within ten years) Td immunization status required.

9. **C.P.R. Training:** Entering clinical courses, you must have a CPR card which must remain current throughout the clinical program. Training may be obtained through the Red Cross, Delta College, your local Community Education, or Hospital Education Department. A photocopy of your certificate must be turned in to the Nursing Division Office prior to the start of classes. The CPR certification, known as Professional Rescuers CPR, must include one-and two-person rescuer, infant rescuer and airway obstruction relief. Students with expired CPR certification, TB Test, and/or physical exam will be removed from the clinical sequence.

10. In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes and transportation to clinical agency settings, including possible parking charges.

11. You will receive a Nursing Student Handbook upon entering the clinical nursing sequence, which contains additional information, requirements and specific program policies that you are required to comply with.

12. Any student with a previous or current felony conviction must inform the Nursing Division Chairperson and/or nursing counselor of said conviction. Students should be aware that a felony conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. The admittance to and/or continuation in a clinical sequence may be affected by a felony conviction. Students should be aware that the current licensure application form now requests the following information:

- a. History of felony conviction(s).
- b. History of conviction of a misdemeanor punishable by imprisonment for a maximum of two years.
- c. History of conviction of a misdemeanor involving illegal delivery, possession or use of alcohol or a controlled substance (including motor vehicle violations).
- d. Treatment for substance abuse in past two years.
- e. History of malpractice settlements, awards or judgments.
- f. Previous application for licensure/or NCLEX in Michigan or other jurisdictions.
- g. History of revoked, suspended, or denied licensure or registration, or other disciplinary action taken or presently pending. Questions may be directed to the Michigan Board of Nursing (517) 335-0918.

13. See page 94 for graduation requirements.

14. Delta College reserves the right to modify program requirements.

RADIOGRAPHY

Associate in Applied Science Degree

Working under the supervision of a physician, Radiographers (also called Radiologic Technologists) assist in patient care and diagnosis through the use of x-ray equipment to take images of the internal structures of a patient's body. Radiographers position the patient; determine and set exposure factors; expose and process the required number of radiographs; prepare and help administer chemical mixtures called contrast media; assist in fluoroscopic examinations; and use radiation protection devices and techniques. Upon successfully completing this program, you are eligible to take the national certification examination administered by the American Registry of Radiologic Technologists. This program is accredited by the Joint Review Committee on Education in Radiologic Technology.

	Suggested Sequence	Sem Hrs
General Education Courses		
*BIO 102 Microbiology and Infection Control	■ ■ ■ ■	2
*BIO 131 Anatomy and Physiology I	■ ■ ■ ■	4
*BIO 132 Anatomy and Physiology II	■ ■ ■ ■	4
# ENG 111 College Composition I	■ ■ ■ ■	3
# ENG 112 College Composition II	■ ■ ■ ■	3
*HSC 105 Medical Terminology	■ ■ ■ □	2
*HSC 140 Basic Medical Emergencies	■ ■ ■ □	2
# POL 103 Introduction to American Government	■ ■ ■ ■	3
# PSY 101 Applied Psychology OR		
* PSY 211 General Psychology	■ ■ ■ ■	3/4
* RAD 102 Introduction to Radiography	□ ■ ■ □	2
# SPH 114 Interpersonal Communications	■ ■ ■ ■	3
	SUBTOTAL	31/32

Prior to attempting to register to begin the clinical sequence you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 33 of this catalog for the required procedures.

Clinical Course Sequence:

First Semester (Fall)

LW 206A Occupational Wellness 1	1
*RAD 100 Basic Science of Medical Imaging	3
*RAD 105 Fundamentals of Radiography	2
*RAD 110 Principles of Radiographic Exposure	1
*RAD 115 Clinical Orientation	3
	SUBTOTAL
	10

Second Semester (Winter)

LW 206B Occupational Wellness 2	5
*RAD 120 Principles of Radiation Biology & Protection	2
*RAD 130 Radiographic Procedures I	2
*RAD 135 Clinical Education I	6
*RAD 140 Clinical Seminar I	1
	SUBTOTAL
	11.5

Third Semester (Spring)

LW 206C Occupational Wellness 3	5
*RAD 150 Radiographic Procedures 2	2
*RAD 155 Radiographic Quality Assurance	1
*RAD 160 Clinical Education 2	7
*RAD 165 Clinical Seminar 2	1
	SUBTOTAL
	11.5

Fourth Semester (Fall)

*RAD 210 Pathology in Radiography	2
*RAD 215 Radiographic Procedures 3	2
*RAD 220 Clinical Education 3	7
*RAD 225 Clinical Seminar 3	1
	SUBTOTAL
	12

Fifth Semester (Winter)

*RAD 235 Radiographic Procedures 4	2
*RAD 240 Special Procedures	3
*RAD 245 Clinical Education 4	7
*RAD 250 Clinical Seminar 4	1
	SUBTOTAL
	13

Sixth Semester (Spring)

*RAD 260 Clinical Education 5	5
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TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 94/95

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

With a GPA of 2.0 overall.

- Approximately 18 students will be accepted each Fall Semester for Radiography courses. After successfully completing the prerequisite qualifications and submitting a "Validation Application for Health Clinical Programs," you will be eligible to attempt to register per special phone registration listed in the Fall Academic Class Schedule. The procedures for application into the clinical portion of the Radiography Program are listed on page 33 of this catalog and are available in the Counseling Office.
- Prerequisite qualifications are: (a) high school graduate or GED equivalent; (b) be admitted to Delta College; (c) provide transcripts from high school and all other colleges attended; (d) completion of each of the following courses with a "C" (2.0) minimum grade; HSC 105, HSC 140, RAD 102, BIO 102, BIO 131 & 132 and completion, with a "C" (2.0) grade average of at least 9 credits from the remaining general education courses listed PLUS SPH 114.
- Current CPR certification (for the Professional Rescuer) must be maintained throughout enrollment in the Radiography Program.
- You must have a complete physical examination, including a negative TB test. Prior to clinical assignments, students must either submit proof of Hepatitis B immunization or sign a waiver form provided during program orientation.
- Radiography Program courses must be taken together in the sequence shown.
- You must achieve a minimum "C" (2.0) grade in each Radiography course to be eligible to continue in and graduate from the Program. You must comply with all Radiography Program Progression and Retention Policies (copy available from the Counseling Office or Program faculty).
- In addition to tuition and fees and textbooks costs, you must purchase uniforms and clinic shoes; provide your transportation to clinic settings; and pay for meals, parking fees, and any medical treatment which becomes necessary.
- Math skills through algebra are highly recommended. You are advised to take MTH 107 if your algebra skills are weak.
- Computer skills are highly recommended.
- Student Re-entry procedures are printed in the handbook given to all clinical students.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.
- Clinical education courses (1, 2, 3, 4, 5) are conducted mainly during daytime hours; however, off-shifts (2nd or 3rd shifts) may be assigned to meet course objectives.

REAL ESTATE

Associate in Business Studies Degree

This Program provides training in the real estate business and is designed for personnel in real estate positions of sales, broker, manager, realtor. In order to declare this program and to receive the Real Estate Associate Degree, you must successfully complete the GRI courses through the Michigan Association of Realtors.

	Suggested Sequence	Sem Hrs
General Education Courses		
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
PHL 203 Business Ethics	□ □ ■ ■	3
POL 103 Introduction to American Government	■ ■ ■ ■	3
SUBTOTAL		8

Business Courses

ACC 211 Principles of Accounting I	□ ■ ■ ■	4
AIB 118 Mortgage Loan Documentation	□ ■ ■ ■	2
ARC 101 Materials and Methods of Construction	■ ■ ■ ■	3
CIS 133 Introduction to Computer Information Systems	■ ■ ■ ■	4
GB 143 Principles of Advertising	■ ■ ■ ■	3
GB 145 Sales	■ ■ ■ ■	3
GB 153 Introduction to Business	■ ■ ■ □	3
GB 243 Principles of Marketing	□ ■ ■ ■	3
LAS 150 Real Estate Law	□ ■ ■ ■	2
OSE 151 Business Communications I	■ ■ ■ □	3
OSE 152 Business Communications II	□ ■ ■ ■	3
1RE 150 Real Estate Fundamentals	■ ■ ■ □	3
1RE 280 Real Estate Principles	□ ■ ■ ■	8
2 # --- Approved Electives	□ ■ ■ ■	10
SUBTOTAL		54
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

Approved Electives

ACC 212 Principles of Accounting II	4
ARC 111 Mechanical & Electrical Systems for Buildings	3
ARC 211 Elements of Structural Design	3
ART 251 History of Architecture	2
ART 252 History of American Architecture	2
CIS 160 Introduction to Internet	2
ECN 221 Principles of Economics	4
GB 251 Business Law	3
OSE 195 Desktop Publishing	2
PSY 101 Applied Psychology	3
1RE 284 Real Estate Valuation	3
1RE 285 Real Estate Appraiser	2
SPH 112 Fundamentals of Oral Communication	3
SPH 114 Interpersonal Communications	3
SPH 212 Listening	3

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

- Upon presentation of:
 - Copy of the grade sheet from the state exam to the Chairperson of the Business Division. Delta College will grant 3 credits for RE 150 based on prior learning experience.
 - Copy of the GRI Certificates, Delta College will grant 8 semester hours of credit in RE 280 for prior learning experience.
 - Copy of a certificate of completion for the Real Estate Valuation Specialist License (from the State of Michigan) to the Chairperson of the Business Division, Delta College will award 3 credits for RE 284, based on prior learning experience.
 - Copy of a certificate of completion for a State Licensed Real Estate Appraiser (from the State of Michigan) to the Chairperson of the Business Division, Delta College will award 2 credits for RE 285, based on prior learning experience.
- Delta College may grant additional credits for prior learning experience as electives, upon documentation of successful completion of Michigan Real Estate Specialty Licenses/Certifications in the Real Estate field.
- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.
- If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

REFRIGERATION, HEATING, AIR CONDITIONING SERVICE TECHNOLOGY

Certificate Program

This program will provide you education and skill training for service technicians in the Refrigeration, Heating, and Air Conditioning Service Industry. Technicians on the job are needed to test, troubleshoot, repair, install, and sell the wide range of mechanical and electrical appliances and components in this field. Advanced education at the Associate Degree level is available to you at a neighboring college.

	Suggested Sequence	Sem Hrs
General Education Courses		
MTH 107 Algebra I	■ □ □ □	3
ENG 111 College Composition	■ ■ ■ ■	3
SUBTOTAL		6

Technical Courses

RHA 121 Fundamentals of Refrigeration & A/C	■ □ □ □	3
RHA 122 Refrigeration & A/C Service I	□ ■ □ □	3
RHA 123 Commercial Refrigeration I	□ □ □ □	3
RHA 124 Refrigeration & A/C Service II	□ □ ■ □	3
RHA 125 Commercial Refrigeration II	□ □ □ ■	3
RHA 135 Heating System Fundamentals	■ ■ ■ □	3
RHA 136 Heating Service Fundamentals OR	□ ■ ■ ■	3
RHA 140 OR		
SKET106 Applied Electricity I	■ □ □ □	3
RHA 142 OR		
SKMT171 Sheetmetal I	□ ■ ■ ■	2
SUBTOTAL		26

TOTAL CREDITS REQUIRED FOR CERTIFICATE 32

NOTATIONS:

- See page 94 for graduation requirements.
- Delta College reserves the right to modify program requirements.



RESIDENTIAL CONSTRUCTION

Associate in Applied Science Degree/Certificate

The Certificate Program is designed to prepare you for jobs in rough carpentry and house framing with the skills you have learned in such areas as: job specifications and drawings, building materials, use of woodworking and surveying tools, cost estimations, concrete work, and exterior finishing. Completion of this Program preempts years of apprenticeship in the construction field. You may become self-employed or find employment with a contractor or in a building supply center.

In addition to skills gained from courses completed in the Residential Construction Certificate Program, students completing the Associate degree will have learned construction techniques in interior trim, cabinet making and installation, equipment installation, and interior finishing. The Program also offers the breadth of education necessary for a successful self-employed business or lumberyard management and has the support of the home builders association.

	Suggested Sequence	Sem Hrs
General Education Courses		
ENG 111 College Composition I	■ □ □ □	3
ENG 113 Technical Writing OR		
ENG 112 College Composition II	□ ■ □ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
* POL 103 Introduction to American Government	■ ■ ■ ■	3
PSY 101 Applied Psychology OR		
PSY 211 General Psychology	■ ■ ■ ■	3/4
SUBTOTAL		14/15

Technical Courses

>RC 101 Construction Print Interpretation	■ □ □ □	3
ARC 101 Materials and Methods of Construction OR		
RC 102 Building Materials	■ □ □ □	3
>RC 104 Construction Laboratory I	■ □ □ □	3
ARC 221 Site Preparation OR		
RC 105 Building Site Surveying	□ ■ □ □	3
>RC 106 Concrete and Foundations	□ ■ □ □	4
>RC 108 Construction Safety	□ ■ □ □	2
ARC 105 Architectural Drafting I OR		
RC 109 Residential Construction	■ □ □ □	4
>*RC 113 Carpentry Math	■ □ □ □	2
>*RC 114 Framing Square	■ □ □ □	3
>RC 200 Construction Contracting Rules and Regulations	□ □ ■ □	3
>RC 201 Rough Framing and Outside Finishing	□ □ ■ □	4
ARC 204 Estimating Building Construction OR		
RC 202 Building Materials Estimation	□ □ ■ □	3
>RC 203 Construction Laboratory II	□ □ ■ □	2
>RC 204 Inside Finishing and Hardware	□ □ □ ■	3
RC 205 Cabinet Making and Millwork	□ □ □ ■	5
ARC 111 Mechanical and Electrical Systems for Buildings OR		
RC 206 Plumbing, Heating and Electrical Equipment	□ □ □ ■	3
ARC 211 Elements of Structural Design OR		
RC 211 Elements of Structural Design	□ ■ □ □	3
SUBTOTAL		53

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. RC 113 may be waived if you score on the numerical skills part of ASSET recommends Algebra I (Math 107) or higher.
- 2. See page 94 for graduation requirements.
- 3. Delta College reserves the right to modify program requirements.
- 4. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.



An Employer's Opinion

"Delta College provides an expansive resource for people with a broad range of work experience and abilities."

Laura J. Hamilton, PHR
Human Resources Manager
Bay Cast, Inc., Bay City

RESPIRATORY CARE

Associate in Applied Science Degree

As a Respiratory Therapist you will be qualified to assume primary clinical responsibility for all respiratory care modalities, including responsibilities involved in the supervision of respiratory technician functions. The therapist is also capable of serving as a resource person to the physician with regard to current practices in respiratory care and to the hospital staff regarding effective and safe methods for administering respiratory care. Respiratory Therapists who have a certificate of completion from an AMA-approved therapist training program, a minimum of 62 college credits, and six months of experience following completion of the program are eligible to apply for registration by the National Board for Respiratory Care (NBRC). The process consists of two written exams and clinical simulation. Applicants must pass all three to be awarded the Registered Respiratory Therapist (RRT) credential.

	Suggested Sequence	Sem Hrs
General Education Courses		
*BIO 131 Anatomy & Physiology I	■ □ □ □	4
*BIO 132 Anatomy & Physiology II	□ ■ □ □	4
*ENG 111 College Composition I	■ □ □ □	3
*ENG 112 College Composition II	□ ■ □ □	3
*HSC 105 Medical Terminology	■ □ □ □	2
*LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
*LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
*POL 103 Introduction to American Government	■ ■ ■ ■	3
*RT 100 Basic Sciences for Respiratory Care	■ ■ ■ ■	2
*PHL 215 Health Care Ethics OR		
*PSY 101 Applied Psychology OR		
*PSY 211 General Psychology OR		
*SOC 211 Principles of Sociology OR		
*SOC 245 Death Education OR		
*SPH 112 Fundamentals of Oral Communication	■ ■ ■ ■	3/4
SUBTOTAL		26/27

Application to the professional phase of this program may be made after successfully completing ("C" or better) all courses under General Education that are preceded by a plus sign "+"; however, it is **strongly** recommended that the rest of the General Education courses be completed prior to you beginning your clinical sequence.

Clinical Course Sequence

First Semester (Fall)

*RT 117 Basic Respiratory Care I			3
*RT 118 Basic Respiratory Care II			3
*RT 121 Orientation to RC as a Profession			2
*RT 126 Clinical Education I			3
*RT 131 Artificial Airway Care and Manual Ventilation			2
SUBTOTAL			13

Second Semester (Winter)

*RT 132 Adult Ventilatory Care			3
*RT 135 Diagnostics and Special Procedures			4
*RT 146 Clinical Education 2			6
*RT 149 Clinical Education 2 Seminar			1
SUBTOTAL			14

Third Semester (Spring)

*RT 150 Cardiovascular Evaluation and Monitoring	3
SUBTOTAL	3

Fourth Semester (Fall)

*RT 207	Cardiopulmonary Pathophysiology	3
*RT 211	Advanced Cardiopulmonary Physiology	3
*RT 212	Advanced Ventilator Management	2
*RT 214	Seminar I	1
*RT 216	Rehabilitation and Home Care	1
*RT 226	Clinical Education 3	6
*RT 229	Clinical Ed 3 Seminar	1
SUBTOTAL		17

Fifth Semester (Winter)

*RT	231	Maternal and Neonatal Respiratory Care	2
*RT	234	Seminar 2	1
*RT	240	Advanced Respiratory Care Pharmacology	3
* RT	244	Optional Rotation/Special Project	1
*RT	246	Comprehensive Clinical Education	8
SUBTOTAL			15
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			88/89

NOTATIONS:

- * A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Prior to enrolling in BIO 131, you must either pass the BIO 130 challenge exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the challenge exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives being tested is available to review in the Counseling Center.
- 2. A maximum of 15 students will be accepted each Fall Semester for Respiratory Care courses from qualified students who have been assigned a "semester and year of validation." You will be placed on this list only **after** successfully completing the prerequisite qualifications and submitting a "Validation Application for Health Clinical Program" to the Records and Registration Office. The procedures for application into the Respiratory Care Program are on page 33 of this catalog and are available in the Counseling Office.
- 3. Prerequisite qualifications are: (a) high school graduate or GED equivalent (b) be admitted to Delta College; (c) provide transcripts from high school and all other colleges attended; and (d) completion with a "C" (2.0) minimum grade in each: RT 100, HSC 105, BIO 131 & 132.
- 4. Prior to enrollment in RT 100, you must have good basic algebra skills. You are advised to take MTH 107 if your algebra skills are weak.
- 5. After you receive notification of acceptance for the Fall Semester, you must have a complete physical examination including a negative TB test.
- 6. RT courses are offered day hours only and generally must be taken together in the sequence shown. You must achieve a minimum "C" (2.0) grade in each RT course to be eligible to continue in the Program.
- 7. In addition to tuition and textbook costs, you must purchase a laboratory coat, protective eye wear, name tag, provide your own transportation to clinical settings (plus possible hospital parking charges), and purchase three Self-Assessment Exams (total cost approximately \$100) during the final semester in the Program.
- 8. Admission to and continuance in the Program is contingent upon your compliance with all policies contained in the Respiratory Care Student Handbook.
- 9. If you have prior respiratory therapy work experience, you may be eligible to waive or receive equivalent credit for some RT courses.
- 10. Student Re-entry procedures are printed in the handbook given to all clinical students.
- 11. See page 94 for graduation requirements.
- 12. Delta College reserves the right to modify program requirements.
- 13. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

SKILLED TRADES

OPTIONS:

CARPENTER	PIPEFITTER
ELECTRICIAN	PLUMBING-PIPEFITTER
JOBGING MOLDER	STATIONARY BOILER ENGR.
MACHINE REPAIR	TINSMITH
MILLWRIGHT	TOOL/DIEMAKER
PATTERN MAKER	TOOL HARDNER

Associate in Applied Science Degree

As an apprentice, you may apply your related training towards an Associate in Applied Science Degree. In addition to the degree requirements listed below, the following requirements must also be met: 1. Successful completion of all courses listed in a specific related training program (33-45 credits). 2. Successful completion of appropriate supportive study elective courses. Supportive electives are courses taken to fit your individual needs. Prior academic course work may be acceptable. Assistance in selecting electives is available from a Delta College counselor familiar with technical career programs. 3. Receipt of a journeyman card or equivalent trade experience.

	Suggested Sequence	Sem Hrs
General Education Courses		
ENG 111 College Composition I	□ □ ■ □	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing OR		
OSE 151 Business Communications I	□ □ □ ■	3
LW --- Lifelong Wellness Elective	□ □ ■ ■	1
LW --- Lifelong Wellness Elective	□ □ ■ ■	1
*POL 103 Introduction to American Government	■ ■ ■ ■	3
# --- --- Supportive Electives	□ □ ■ ■	9/18
SUBTOTAL		20/29

Related Training Options:

(See the following for listing of specific courses for each program)

Carpenter (Building Trades)	■ ■ □ □	33
Electrician (Industrial)	■ ■ □ □	39
Jobbing Molder	■ ■ □ □	38
Machine Repair	■ ■ □ □	40
Millwright	■ ■ □ □	38
Pattern Maker	■ ■ □ □	42
Pipefitter (Industrial Maintenance)	■ ■ □ □	40
Plumber - Pipefitter	■ ■ □ □	39
Stationary Boiler Engineering	■ ■ □ □	41
Tinsmith	■ ■ □ □	40
Tool/Die Maker	■ ■ □ □	39
Tool Hardner	■ ■ □ □	41

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

Suggested Supportive Electives

Economics Courses (ECN)
Electronic Engineering Technology Courses (EET)
General Management Courses (GB)
Industrial Supervision Courses (IS)
Mechanical Technology Courses (MT)
Psychology Courses (PSY)

NOTATIONS:

1. See page 94 for graduation requirements.
2. Delta College reserves the right to modify program requirements.
3. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Apprenticeship Trade Related Instruction Programs

Delta College offers required Trade Related Instruction Programs for apprentices and up-graders in the industrial trades, building trades, and maintenance trades from the tri-county and surrounding areas. Trade Related Instruction Programs are designed with the cooperation of industry and provide the instruction to strengthen the theoretical knowledge in each trade area. The combination of related instruction and on-the-job experience is essential in order to provide a complete program to train skilled personnel for the trades. Courses are offered both day and evening to accommodate shift assignments. The scheduling and registration for courses is the responsibility of the Skilled Trades Department; therefore, any inquiry about a particular class should be made **directly** to them by phoning (517) 686-9437 or 686-9438.

Since many company apprenticeship programs are registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, it is imperative that the registration for these courses be coordinated by the local plant apprenticeship coordinator and the College Skilled Trades Department. All Trade Related Instruction is subject to change per agreement with the participating employer and Delta College.

The following programs are representative of typical Trade Related Instruction Programs Delta College offers in conjunction with area employers. Employers, however, are not restricted to just these programs and many elect to modify our programs to meet their specific needs. Employers desiring more information on Delta's Trade Related Instruction Program should call the Skilled Trades Program Manager at (517) 686-9438 or 686-9437.

Also see previous column for Associate in Applied Science Degree requirements for Skilled Trades Programs.

Trade Related Instruction Programs:

Carpenter (Building Trades)

Course No.	Course Title	Credit Hrs	Clock Hrs
SKCT111	Construction Print Interpretation	3	45
SKCT102	Building Materials	3	45
SKCT113	Carpentry Math & Framing Sq.	2	30
SKCT114	Framing Square	3	45
SKCT105	Building Site Surveying	3	45
SKCT106	Concrete and Foundations	4	75
SKCT201	Rough & Outside Finishing Framing ..	4	90
SKCT204	Inside Finishing and Hardware	3	75
SKCT205	Cabinet Making and Millwork	5	105
SKWL103	Fuel Gas Welding and Cutting	3	45
Totals		33	600

Electrician (Industrial)

Course No.	Course Title	Credit Hrs	Clock Hrs
SKMA111	Applied Integrated Electrical Math. I ..	5	75
SKMA112	Applied Integrated Electrical Math. II ..	3	45
SKMA113	Applied Integrated Electrical Math. III ..	3	45
SKEL111	Conventional Controls	3	45
SKEL101	Basic Electronics	6	90
SKEL102	Industrial Electronics	4	60
SKEL131	AC/DC Machinery	3	45
SKEL121	Advanced Controls I	5	75
SKEL122	Advanced Controls II	4	60
SKEL141	Electrical Shop	3	45
Totals		39	585

Jobbing Molder

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Combined Drawing & Blueprint Rdg	4	60
SKDR111	Drawing II	3	45
SKDR131	Pattern Design	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT111	Metals	3	45
SKMT231	Fundamentals of Foundry Technology	3	45
SKPH101	Applied Physics	4	45
SKTR181	Machine Tools I	2	60
SKTR182	Machine Tools II	3	45
SKTR183	Machinist Handbook	3	45
Totals		38	570

Machine Repair

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching & Blueprint Rdg	4	60
SKDR111	Drawing II	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT102	Hydraulics and Pneumatics II	3	45
SKMT111	Metals	3	45
SKMT161	Industrial Rigging and Safety	2	30
SKTR181	Machine Tools I	2	30
SKPH 101	Applied Physics	4	60
SKTR182	Machine Tools II OR		
SKTR183	Machinery Handbook	3	45
SKCN160	Computer Numerical Controls I	3	45
Totals		40	600

Millwright

Course No.	Course Title	Credit Hrs	Clock Hrs
SKCT101	Industrial Millwright Procedures	3	45
SKDR101	Sketching and Blueprint Reading	4	60
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT151	Power Transmission	3	45
SKMT161	Industrial Rigging & Safety	2	30
SKMT171	Sheetmetal I	2	30
SKMT172	Sheetmetal II OR	3	45
SKMT102	Hydraulics and Pneumatics II	3	45
SKPH101	Applied Physics	4	60
SKWL103	Fuel Gas Welding & Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding OR	3	45
SKWL107	Intro. to GMAW/SAW	3	45
Totals		40	600

Pattern Maker

Course No.	Course Title	Credit Hrs	Clock Hrs
SKCA114	Autocad Introduction	2	30
SKDR101	Sketching & Blueprint Rdg	4	60
SKDR111	Drawing II	3	45
SKDR131	Pattern Design	3	45
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT231	Fundamentals of Foundry Training	3	45
SKTR183	Machinery Handbook	3	45
SKCN160	Computer Numerical Controls I	3	45
SKTR161	Computer Numerical Controls II	3	45
	Elective Courses (Select 10 credit hours)		
SKMT 111	Metals	3	45
SKTR 181	Machine Tools I	2	30
SKTR 182	Machine Tools II	3	45
SKPH 101	Applied Physics	4	60
SKDR 121	Descriptive Geometry	3	45
Totals		42	630

Pipefitter (Industrial Maintenance)

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching and Blueprint Reading	4	60
SKDR141	Pipe and Tube Isometrics	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKPH101	Applied Physics	4	60
SKPT101	Industrial Piping	4	60
SKWL103	Fuel Gas Welding	3	45
SKPT106	Pipefitters Handbook	3	45
SKPT121	Refrigeration and Air Conditioning	3	45
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT102	Hydraulics and Pneumatics II	3	45
Totals		40	600

Plumber-Pipefitter

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching & Blueprint Reading	4	60
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT171	Sheetmetal	2	30
SKPH101	Applied Physics	4	60
SKPT101	Industrial Piping	4	60
SKPT106	Pipefitters Handbook	3	45
SKPT121	Refrigeration & Air Conditioning	3	45
SKWL103	Fuel Gas Welding & Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding	3	45
Totals		39	585

Stationary Boiler Engineering

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching and Blueprint Reading	4	60
SKDR141	Pipe and Tube Isometrics	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT161	Industrial Rigging and Safety	2	30
SKPT106	Pipefitters Handbook	3	45
SKPT111	Stationary Boiler Engineering I	2	30
SKPT112	Stationary Boiler Engineering II	2	30
SKPT113	Stationary Boiler Engineering III	2	30
SKPT114	Stationary Boiler Engineering IV	3	45
SKPT121	Refrigeration & Air Cond.	3	45
SKWL103	Fuel Gas Welding and Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding	3	45
Totals		40	600

Tinsmith

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching & Blueprint Reading	4	60
SKDR121	Descriptive Geometry	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT161	Industrial Rigging & Safety	2	30
SKMT171	Sheetmetal I	2	30
SKMT172	Sheetmetal II	3	45
SKMT173	Sheetmetal III	3	45
SKPH101	Applied Physics	4	60
SKPT126	Air Movement & Duct Design	3	45
SKWL103	Fuel Gas Welding	3	45
SKWL104	Intro. to Shielded Metal Arc Welding OR	3	45
SKWL107	Intro. to GMAW/SAW	3	45
Totals		40	600

Tool/Die Maker

Course No.	Course Title	Credit Hrs	...Clock Hrs
SKDR101	Sketching & Blueprint Reading	4	60
SKDR111	Drawing II	3	45
SKDR130	Tool & Die Design	4	60
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT111	Metals	3	45
SKPH101	Applied Physics	4	60
SKTR181	Machine Tool I	2	30
SKTR182	Machine Tool II	3	45
SKTR183	Machinery Handbook	3	45
Totals		39	585

Tool Hardener

Course No.	Course Title	Credit Hrs	...Clock Hrs
SKDR101	Sketching & Blueprint Reading	4	60
SKDR111	Drawing II	3	45
SKDR130	Tool & Die Design	4	60
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT111	Metals	3	45
SKMT112	Ferrous Heat Treatment	2	30
SKPH101	Applied Physics	4	60
SKTR181	Machine Tools I	2	30
SKTR182	Machine Tools II	3	45
SKWL103	Fuel Gas & Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding	3	45
Totals		41	615



SURGICAL TECHNOLOGY

Associate in Applied Science Degree/ Certificate

The Surgical Technologist's primary function is to provide a safe, therapeutically-effective environment for the surgical patient by assisting the surgeon and performing related services in the operating room. This program is accredited by CAAHEP and graduates will be eligible to sit for the National Certifying Exam.

	Suggested Sequence	Sem Hrs
General Education Courses		
>+BIO 131 Anatomy and Physiology I	■ □ □ □	4
>+BIO 132 Anatomy and Physiology II	□ ■ □ □	4
>+BIO 203 General Microbiology	□ □ ■ □	4
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II	□ □ □ □	3
>+HSC 105 Medical Terminology	■ ■ □ □	2
>+HSC 140 Basic Medical Emergencies	■ ■ ■ □	2
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
POL103 Introduction to American Government	■ ■ ■ ■	3
>+PSY 101 Applied Psychology OR		
>+PSY 211 General Psychology OR		
>+SOC 211 Principles of Sociology OR		
>+SOC 275 Sociology of Stress	■ ■ ■ ■	3/4
>+ST 100 Introduction to Health Care Service	□ □ ■ □	3
SUBTOTAL		33/34

Application to the clinical phase of this program may be made after successfully completing with a "C" or better all courses under General Education that are preceded by a plus sign "+".

Clinical Courses

First Semester (Fall)

>+ST 107 Pharmacology in the Operating Room	2
>+ST 110 The Surgical Patient	2
>+ST 120 Fundamentals of Surgical Technology	6
>+ST 130 Surgical Anatomy	4
>+ST 140 Operative Procedures	4
SUBTOTAL	18

First Semester (Winter)

>+ST 200 Clinical Externship	12
>+ST 201 Operating Room Seminar	3
SUBTOTAL	15

TOTAL CLINICAL 33

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 66/67

TOTAL CREDITS REQUIRED FOR CERTIFICATE 55

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">" (55 credits).

NOTATIONS:

* A "C" (2.0) minimum grade is required in each asterisked course.

1. As an applicant, you must be a high school graduate or submit a GED equivalency certificate.
2. Math skills through MTH 107 Algebra I are a must for you in this program.
3. Prior to enrolling in BIO 131 you must either pass the BIO 130 challenge exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the challenge exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives being tested is available to you for review in the Counseling Center.
4. **Application:** The procedures for application into the clinical portion of the Surgical Technology Program are on page 33 of this catalog and are available in the Counseling Center.
5. PRIOR to beginning clinical, you MUST have CPR certification, which includes the Two Person Rescuer Technique. CPR certification must be renewed annually.
6. Once accepted, you must have a negative TB skin test and/or chest X-ray and a current physical examination which confirms you are free from communicable disease and capable of performing the duties necessary for the safe care of patients. It is highly recommended that you obtain Hepatitis B vaccination.
7. You must achieve a minimum of "C" (2.0) grade in each clinical course to be eligible to continue in this program. These courses must be taken in the sequence shown and enrollment in these courses is by permission only.
8. When in the clinical phase of the program, you must have transportation available as sites may not be in your community.
9. There will be additional uniform expenses that will be explained at the Orientation to the Clinical.
10. You are responsible for paying the cost of any medical care which might be necessary if you are injured or become ill as a result of clinical practice activities. The College does not provide insurance coverage for such situations.
11. Student Re-entry procedures are printed in the handbook given to all clinical students.
12. See page 94 for graduation requirements.
13. Delta College reserves the right to modify program requirements.
14. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

An Employer's Opinion

"St. Lukes Healthcare Association has always appreciated the consistent high caliber graduates of Delta College to fill our openings in the medical field."

Human Resources, St. Lukes Hospital

WATER ENVIRONMENT TECHNOLOGY

Associate in Applied Science Degree

The vast majority of water and wastewater treatment plant operators work for local governments. You may work for private water supply and sanitary services companies, many of which provide operation and management services to local governments on a contract basis.

Graduation from this program with completion of WET 265 will prepare you to make application to write any entry-level Water or Wastewater certification examinations.

	Suggested Sequence	Sem Hrs
General Education Courses		
BIO 110 Environmental Science	■ ■ ■ □	4
CHM 105 Technical Chemistry I AND	■ □ □ □	5
CHM 106 Technical Chemistry II (recommended sequence) OR	□ ■ □ □	5
CHM 111 General and Inorganic Chemistry I AND	■ □ □ □	4
CHM 112 General and Inorganic Chemistry II	□ ■ □ □	4
CIS 133 Introduction to Computer Systems OR		
CPS 171 Computer Science I	■ ■ □ □	4/3
ENG 111 College Composition I	■ □ □ □	3
ENG 113 Technical Writing (recommended) OR		
ENG 112 College Composition II	□ ■ □ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
MTH 111 Applied Algebra (recommended) OR		
MTH 119 Intermediate Algebra	■ ■ □ □	4
POL 103 Introduction to American Government	■ ■ ■ ■	3
SUBTOTAL		30/33

Technical Courses		
WET 110 Water Treatment	■ □ □ □	3
WET 112 Waste Water Treatment	■ □ □ □	3
WET 211 Water Chemistry I	□ □ ■ □	4
WET 212 Water Chemistry II	□ □ ■ □	4
WET 220 Microbiology of Water	□ □ □ ■	4
WET 230 Water/Waste Utility Management	□ □ ■ ■	3
WET 240 Applied Hydraulics	□ □ ■ ■	3
WET 244 Water/WasteWater Utility Equipment Maintenance	□ □ ■ ■	3
WET 246 Water/WasteWater Utility Electrical Maintenance	□ □ ■ ■	2
2 WET 265 Practicum in Water/WasteWater Treatment	□ □ □ ■	4
SUBTOTAL		33
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		63/66

Recommended Electives

2 ENV 100 Environmental Regulations	3
2 ENV 151 HAZWOPER Training	2.7
2 ENV 153 Confined Space Training	1.3
2 GLG 130 Environmental Geology	4
2 GLG 230 Introductory Field Methods in Hydrogeology	2

NOTATIONS:

1. You must take both CHM 105 and CHM 106 or both CHM 111 and 112 to meet program requirements. You may not take any other combination of these courses for program credit; i.e., CHM 111 and CHM 106.
2. If you do not need to take the Michigan Department of Environment Quality Water and Wastewater entry-level exams, you may replace WET 265 with one of the recommended electives or an elective approved by the Division Chair or Program Coordinator to complete at least 63 credits.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

WELDING ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

The program combines specialized welding training with related technical and general education courses. The program meets the educational requirements necessary to pursue a baccalaureate degree in a variety of welding related careers. Students should contact Counseling or the Welding Staff for career or transfer information.

	Suggested Sequence	Sem Hrs
General Education Courses		
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II	□ ■ □ □	3
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
LW --- Lifelong Wellness Elective	■ ■ ■ ■	1
MTH 119 Intermediate Algebra	■ □ □ □	4
MTH 121 Plane Trigonometry	□ □ □ □	3
PHY 111 General Physics I	■ ■ □ □	4
POL 103 Introduction to American Government	■ ■ □ □	3
SPH 112 Fundamentals of Oral Communication	■ ■ ■ ■	3
SUBTOTAL		25

Technical Courses

CAD 114 AutoCad Introduction	■ ■ ■ ■	2
MFG 111 Manufacturing Processes	■ ■ ■ ■	3
WELD 103 Fuel Gas Welding and Cutting	■ ■ ■ ■	3
WELD 111 Welding Metallurgy	■ ■ ■ □	3
WELD 114 Shielded Metal Arc Structural and Tank	□ ■ □ □	8
WELD 120 Beginning Industrial Blueprint Reading	■ ■ □ □	2
WELD 122 Blueprint Reading for Welders and Fabricators	□ □ ■ ■	2
WELD 220 Weld Qualification - Plate	□ □ ■ □	4
WELD 224 Shielded Metal Arc Welding Pipe	□ □ ■ □	8
WELD 226 Gas Tungsten Arc Welding	□ ■ ■ □	6
WELD 235 Gas Metal Arc Welding	□ ■ □ □	6
SUBTOTAL		47

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 72

NOTATIONS:

1. For complete program description and details, please call the Industry Education Center at (517) 496-3368 or 496-3373.
2. WELD courses are taught at the Industry Education Center, Midland, Michigan.
3. See page 94 for graduation requirements.
4. Delta College reserves the right to modify program requirements.
5. If you plan to pursue an advanced degree, see pages 27-30 for special transfer agreements.

Non-Degree Programs and Activities

Program/Activity	Code	Academic Credit	Credit-Free (Non-Academic)	Division/Department	Phone Number
Admitting Clerk Program	50587		X	Community Services	686-9418
Apprenticeship Trade Related Instruction:				Corporate Services	686-9530
Carpenter (Building Trades)	60891	X		Corporate Services	686-9530
Electrician (Industrial)	60891	X		Corporate Services	686-9530
Jobbing Molder	60891	X		Corporate Services	686-9530
Machine Repair	60891	X		Corporate Services	686-9530
Millwright	60891	X		Corporate Services	686-9530
Pattern Maker	60891	X		Corporate Services	686-9530
Pipefitter (Industrial Maintenance)	60891	X		Corporate Services	686-9530
Plumber-Pipefitter	60891	X		Corporate Services	686-9530
Stationary Boiler Engineering	60891	X		Corporate Services	686-9530
Tinsmith	60891	X		Corporate Services	686-9530
Tool/Die Maker	60891	X		Corporate Services	686-9530
Tool Hardener	60891	X		Corporate Services	686-9530
Cake Design	782		X	Community Services	686-9417
Computer Instruction			X	Community Services	686-9399
Corrections Officer	45724	X		Social Science	686-9093
Draperies & Curtains	50210		X	Community Services	686-9417
Electrical & Plumbing	50877		X	Community Services	686-9470
Emergency Medical Technician	45583	X		Allied Health	686-9093
Floral Design	50784		X	Community Services	686-9417
Children's Programs/Fantastics/Youth Scholar			X	Community Services	686-9416
Graphic Arts & Photography	50869		X	Community Services	686-9515
Health Unit Coordinator/Ward Clerk	50584		X	Community Services	686-9415
Home Landscaping			X	Community Services	686-9417
Interior Decoration	50214		X	Community Services	686-9417
Liberal Arts	55075		X	Community Services	686-9414
LPN Refresher	50565		X	Community Services	686-9415
Management	252		X	Community Services	686-9470
Medical Insurances/Billing I	286		X	Community Services	686-9415
Minority Managers Forum	50265		X	Community Services	686-9414
Personal Computers Business Applications			X	Corporate Services	835-6421
Phlebotomist Program	50588		X	Community Services	686-9415
Quality & Productivity Improvement			X	Corporate Services	754-8922
Real Estate	50567		X	Community Services	686-9470
RN Refresher			X	Community Services	686-9415
Silversmithing & Jewelry-Making			X	Community Services	686-9414
Stationary Boiler Operator	50893		X	Community Services	686-9470
Taxidermy			X	Community Services	686-9417
Travel Agent Training Program	50794		X	Community Services	686-9416
Upholstery	50218			Community Services	686-9417
Woodworking Technology			X	Community Services	686-9417

• Midland/Auburn Callers - Please call 495-4000 and the last four numbers of the above listed numbers

• You will find more information on these programs and activities in either the Schedule of Academic Classes booklet or Community Services Schedule of Classes. Both are published each semester (three times per year).

Delta College offers a variety of courses and programs designed to meet the needs of the diverse communities it serves through credit and credit-free courses. These courses and programs do not lead to a degree or certificate, but are designed to fill a need identified by an individual or groups of individuals. You will find credit-free classes are enriching and challenging; and also assist an individual with his/her personal or professional development without the pressure of tests, in most instances.

Delta views education as a lifelong process that takes place in a wide variety of environments. These courses and programs are offered throughout the community college district wherever the need exists, adequate facilities are available, and enrollment justifies their being offered. Courses are taught on the Campus, in public schools, in industrial plants, in commercial office buildings, at Delta College Centers and at other suitable locations. The length and frequency of courses differ and are determined by the type and objectives of each course.

The College maintains close liaison with, and is assisted by, program advisory committees; professional, civic and church organizations; governmental agencies; business; the labor industry; and other groups in determining needs and providing education and training to the community.

The credit programs and courses are offered through our 10 academic divisions and Corporate Services. Credit-free programs are primarily offered through Community Services and Corporate Services.

The credit courses are included in the Schedule of Academic Classes booklet or Skilled Trades Schedule each semester. The credit-free programs and courses are listed in the Community Services Course Digest each semester.

Financial Aid for Community Services Courses: Financial aid for students enrolling for certain Community Services courses may be available. It is intended for individuals who are supported by some type of public assistance or those employed at a low income level. Students must be residents of Bay, Midland, or Saginaw Counties. Funds are limited.

Requests for aid should be made prior to expected enrollment.

** If aid is awarded, it will not exceed one-third of tuition costs. The balance must be paid by the student at the time of registration. Students are responsible for course fees, books, supplies, and materials.*

Programs and Activities

Credit-Free (Non-Academic Credit)

Admitting Clerk

Within 15 weeks - 30 hours of theory, 160 hours of clinical. Prerequisites: Keyboarding, Medical Terminology, Medical Insurance Billing I. Clerical support for many types of health care agencies. Starting salary: \$8-\$9.25.

Cake Design

The basic techniques of creating all-occasion cakes to delight customers, family, and friends will be the focus of Cake Design I. More complicated flowers and borders are demonstrated and practiced in the advanced classes.

CDA Child Development Training

This is a 120-hour course for persons interested in becoming credentialed in Child Development (CDA).

Computer Applications Professional

A computer program of study from beginning to advanced levels. Choose extensive or limited training on IBM and Macintosh computers.

- * Free Introductory Seminar
- * Computer Literacy
- * MS-DOS Concepts
- * WordPerfect-Windows
- * Desktop Publishing/Pagemaker
- * Introduction to Macintosh
- * Internet

- * Lotus-Windows
- * Lotus-DOS
- * Excel
- * Microsoft Windows 3.1
- * Microsoft Windows '95
- * Microsoft Word
- * Microsoft Works

* One-to-One private tutoring in English, business math, writing, spelling, and ALL computer courses.

Electrical & Plumbing

Learn the applied fields of electricity and plumbing at the basic levels.

Fast Track Nanny

Laughter, music, games, teaching, travel and partners in parenting can be yours in the accelerated in-home child care professional growth course. Jobs available locally or nationwide with families who value their children and want a professional Nanny to guide their child's development. Fast Track Nanny Program will build competence in health care of the pre-school child, nutrition, games and activities, and professional protocol for the CPN (Certified Professional Nanny). Program approval by the American Council of Nanny Schools

Floral Design

Techniques and procedures of floral design will provide entry-level job skills. Both demonstration and hands-on experience with fresh and silk flowers.

Gifted/Talented & Children's Programs (GTCP)

The various programs offered via GTCP strive to meet the individual academic, social, and emotional needs of children through a variety of programs, events, and services. Fantastics is an enrichment program that expands, enhances, and extends learning opportunities for children ages four to 15 years.

Graphic Arts & Photography

Series of related courses in graphic arts.

- * Alphabets/Calligraphy
- * Cartooning
- * Desktop Publishing
- * Drawing
- * Sign Painting
- * Photography

Health Unit Coordinator/Ward Clerk

Within 15 weeks - 80 hours of theory, 160 hours of clinical. Prerequisites: Keyboarding, Medical Terminology. Performs clerical duties, acts as a receptionist for a health unit and transcribes medication orders. Starting salary: \$8-\$9.50.

Home Landscaping I

Good news for the first-time or experienced planter, tackle your landscape efforts in a planned manner with gratifying results using your time, money and energy in a productive mode. The focus of this course will be: * Determining your landscape needs and budget * Gathering your site data * Preparing a base plan to create your design. There are three distinct classes in this series: Part I: Home Landscaping - The Plan; Part II: Home Landscaping Design; and Part III: Home Landscaping Planting.

Interior Decoration

Teaches interior design skills and may provide entry-level job skills. You will learn the basics of design; how to choose floor and wall covering, lighting fixtures, and accessories; and how to arrange furniture.

Liberal Arts

Liberals Arts is dedicated to the concept of lifelong learning, providing courses for adults in studio arts, computers, writing, history, culture, new age topics, tours, dance, fitness, recreation, dog obedience training, horticulture, and other general interests.

Management

Pursue a career in management in the American Management Association Extension Institute/Delta College.

Medical Insurances/Billing I

Learn medical insurance billing concepts, diagnostic and procedure coding, basic insurance concepts and terminology used by the health insurance carriers, and completion of claim forms for commercial insurance companies.

Minority Managers Forum

The following are the objectives of the Minority Managers Forum:

- Increase participants' awareness of issues, concerns, and practices that impact minority managers.
- Recognize the importance of networking and learn some techniques to network successfully.
- Become cognizant of the process and organizational building blocks for managing diversity.
- Gain knowledge and/or develop skills pertinent in career planning and lateral and upward mobility.
- Provide a forum whereby talents and skills of minority managers can be recognized and utilized.
- Provide professional and personal development opportunities.

Several programs each year are developed to accomplish these objectives.

Personal Computer Business Applications - IBM and Compatible

Our training for business and industry includes Intro to Windows, Word for Windows, Excel for Windows, Lotus 1-2-3 (intro, intermediate, and macros for a variety of versions), WordPerfect (levels I and II), dBase IV, Paradox, Quattro Pro, Intro to the PC, Intro to DOS, as well as consulting in a variety of areas.

Phlebotomist Program

6 weeks - 100 hours of theory, 80 hours of clinical. Prerequisites: Master Student, Medical Terminology, Anatomy & Physiology (BIO 101). Prepares student to perform venipuncture in accordance with procedures established by the National Committee for Clinical Laboratory Standards. Starting salary: \$8-\$9.25.

Real Estate

Prepare for a career in real estate by beginning with Real Estate Fundamentals, a pre-sales license examination course required and approved by the State of Michigan.

RN/LPN Refresher

A comprehensive review in preparation for returning to nursing employment. This course provides an opportunity to review and gain nursing knowledge and skill for direct patient care and leadership roles. A comprehensive pharmacology course is covered. Class and hospital/clinical experience are included.

Silversmithing and Jewelry-Making

Learn the basics of jewelry-making and silversmithing and develop skills to start your own business or find employment with an established jeweler. Courses may be taken individually or as a series.

- Silversmithing: techniques including annealing, soldering, filing and sawing, forming a bezel, fusing metals, various surface treatments, and polishing.
- Jewelry-Making/Lapidary: gemstone cutting, finishing and mounting; cutting sections from slabs, shaping them on grinding wheels, and polishing and mounting them in standard fittings; and assembling a tool kit.

Stationary Boiler Operator

Designed to train you to be employed as a stationary boiler fireman to look after boilers and mechanical equipment in public and private buildings and to assist you to obtain a boiler operator's license as well as stationary engineer's license.

Taxidermy

Discover the history of taxidermy, the tanning process, modern techniques, materials used (non-toxic), overview of business conditions, professional organizations, competition and consumer awareness issues. The actual demonstration of mounting fish, birds, and mammals will be featured. This course is a prerequisite for the upcoming hands-on taxidermy courses: Fish, Deer Head, and Birds.

Travel Agent Training Program - 15 weeks

Includes all phases of the travel business: ticketing, cruises, air travel, tour, basic geography, selling techniques, and 56 hours of computer training.

Truck Driving Training

A career as a professional tractor trailer driver can offer security and financial rewards to men and women who have the skills and desire to be successful. If you are at least 21 years of age, can pass a D.O.T. Physical Examination/Drug Screen, and have a good driving record, then you may qualify to join this program.

Upholstery

Develop upholstery skills for your own employment or for employment in an upholstery business. Learn the upholstery process under the supervision of a skilled upholsterer.

Woodworking

Pursue a career in woodworking. Learn cabinet making, furniture making, kitchen cabinet design, and clock making.

An Employer's Opinion

"Bay Valley Tennis Club always turns to Delta College students for summer camp counselors. The Delta College Elementary Education students benefit from the opportunity to work with youngsters and the youth benefit greatly from their interest and enthusiasm."

Josie Meyer, Managing Tennis Professional
Bay Valley Tennis Club • Bay City



Artist rendition of facade of new South entrance on Main Campus

ACADEMIC POLICIES AND INFORMATION

1. Acceptance of Credit
2. Grading System
3. Disputed Final Grade Policy
4. Your Academic Status
5. Academic Status for Financial Aid Recipients
6. Graduation Requirements
7. Commencement



Acceptance of Credit

From Other Colleges or Training Programs

From Regionally-Accredited Schools

Course work completed at a college or university accredited by one of the six Regional Accrediting Associations of Colleges and Schools will be considered according to the following guidelines:

A. Equivalent Course Work

Freshman and sophomore courses numbered 100 - 299, which were completed with a grade of "C" (2.0) or above on a 4.0 scale and are equivalent to Delta College academic courses will be accepted for credit. Credit will not be granted for courses below the 100-level.

B. Non-Equivalent Course Work

"General Elective" credit will be granted for courses completed with a grade of "C" (2.0) or above on a 4.0 scale that are not equivalent to Delta College courses or disciplines. "General Elective" credit applicable to Humanities, Social Science, Science, or Lab Science will be so noted on the student's Delta transcript. (A student must request that a counselor submit the necessary form to the Records and Registration Office to receive this credit).

From Non-Regionally Accredited Schools

Courses that apply toward a Delta occupational Certificate/Associate degree program will be considered according to the following if they were completed with a grade of "C" (2.0) or above at institutions recognized and approved by the Council on Postsecondary Accreditation (COPA):

1. The Director of Records will forward the transcript for evaluation of the occupational courses to the appropriate Division Chair or Program Director. The following options are available to the Division Chairs or Program Directors:
 - a. Equivalent Delta College credit may be granted upon review of course outlines, and/or course descriptions, and/or appropriate descriptive materials. It is the responsibility of the student to provide any requested materials to enable proper evaluation.
 - b. Equivalent Delta College credit may be granted after successful completion of Delta College courses at the subsequent level.
 - c. Equivalent Delta College credit may be granted upon demonstration of proficiency via examination, interview, or other appropriate evaluation means as determined by the appropriate Division Chair or Program Director.
 - d. Credit may not be granted.
2. No credit will be granted for General Education courses.

Procedures for Evaluating Credits

1. Only **official transcripts** will be evaluated. Delta College will accept as official transcripts only incoming transcripts that have appropriate signatures and seals and have been mailed directly to the College from an issuing institution. Transcripts in the possession of the student or copies of transcripts or grade reports may be used for academic advising or counseling, but no transfer credits will be posted to the Delta College academic transcript from these documents. It is the responsibility of the Delta College Records and Registration Office to verify the official status of the transcript prior to evaluation.

2. Official transcripts should be mailed to the Delta College Admissions Office from the transfer institution. Admissions will then forward them to the Records and Registration Office. Transcripts received from a Michigan college or university at least one month prior to a registration period will generally be evaluated within one week of receipt in the Records and Registration Office. More time may be necessary to evaluate transcripts from out-of-state institutions.

3. Credits only, not grades, are accepted in transfer. Grades earned at another school in courses accepted by Delta College are not entered on the permanent Delta academic transcript or calculated in the Delta College cumulative grade point average.

4. A maximum of 38 transfer credits are applicable to a Delta College Associate degree and the maximum that may be used toward registration priority.

5. The credit value of each course accepted in transfer will be determined by Delta College; the number of credits will never be greater than the Delta College equivalent course, but the number granted may be fewer than the number of credits received at the transfer institution.

6. Transfer credit granted will be shown on the student's permanent academic transcript.

Non-Traditional Credit

1. Military credit

- a. All veterans having a certified DD214 form on file in the Veterans Services Office will be granted two lifelong wellness (LW) credits and two lifelong wellness theory (LWT) credits.
- b. Veterans who have taken educational programs during military service may, under certain conditions, receive elective credit for that work. The Guide to the Evaluation of Educational Experiences in the Armed Services by the American Council of Education is used to determine these elective credits.
- c. Courses completed at accredited military colleges, such as The Community College of the Air Force, may result in the awarding of transfer credit.

2. State-Certified Training

- a. Individuals who have successfully completed training through the Michigan Fire Fighters Training Council may be granted equivalent credit at Delta College upon submission of copies of their state certificates.
- b. Students may be granted credit for the Basic EMT sequence of courses at Delta College if they are already practicing EMT's licensed by the State of Michigan.
- c. Students may be granted credit for other State-certified training if applicable to an **occupational curricula** and approved by the appropriate Division Chair.

3. Correspondence Courses

Credit earned by correspondence from regionally accredited institutions will transfer to Delta College according to the guidelines for equivalent and non-equivalent credit as outlined.

Credit for Prior Learning

You may earn academic credit for prior learning in many areas of study at Delta College. The Credit For Prior Learning Program, administered through the Assessment/Testing Services Office, is designed for students who have gained, through related work experience and/or training, learning that may be equivalent to content taught in actual College courses. If you are interested in any of these programs, please be aware that the following restrictions may apply:

- These options are not available in all areas of study.
- Credits earned through this Program may not be transferrable to other institutions.
- Prior learning credits are not eligible for financial aid.
- You may only apply once for credit in the same course.

Four basic methods are used to assess prior learning. The first three methods are designed for new and currently enrolled students:

1. **Credit By Exam (CBE):** comprehensive challenge examinations are developed and evaluated by Delta College faculty in selected courses. If you earn a passing grade on a CBE examination, the credits will be recorded on your academic transcript for that course. A per-credit-hour-attempted fee is charged prior to taking a CBE examination. We recommend that you discuss the waiver option with your academic counselor.
2. **Credit By Portfolio:** an individualized process in which you submit a portfolio application, resume, personal manuscript, and supporting documentation of your prior learning. The faculty will then review and evaluate this material for possible credit. A per-credit-hour-attempted fee is charged prior to submitting portfolio materials to the appropriate academic Division. If you successfully complete a portfolio, the earned credits will be recorded on your academic transcript.
3. **Credit By Training:** an individualized process in which you earn academic credit for Delta College Training Programs. If you believe that you qualify for this option, contact Assessment/Testing.

The fourth method is designed primarily for transfer students:

4. **College Level Examination Program (CLEP) or Defense Activity for Non-Traditional Educational Support (DANTES):** national standardized tests in selected academic areas. The application forms, course equivalents, and minimum passing scores for the tests accepted at Delta College are available from Assessment/Testing. There is a test fee and a non-refundable administration fee charged per test. You must request that CLEP or DANTES send your examination scores to the Delta College Records and Registration Office. Upon receipt of successful exam scores, Records and Registration will record the appropriate credit on your academic transcript.

Articulation Agreements with High Schools and Career Centers

Articulation is a process which links two educational institutions together to help students make a smooth transition from one level of education to the next without experiencing delay, duplication of courses, and loss of semester credits.

Delta College is part of a statewide effort to implement the Competency Based Education Articulation of occupational programs. It is one of nine demonstration sites in Michigan, supported by a grant from the Michigan Department of Education, Vocational-Technical Education Services, in which secondary and post-secondary teachers, counselors, and administrator jointly develop course and program agreements.

The secondary articulation agreements allow students to receive college credit for instruction received at the secondary school/center for specific occupational courses. These agreements are signed contracts between the faculty and administrators of both institutions, and are re-evaluated bi-annually. The instructors at the secondary level initiate the process by completing a student request form and submitting it to the Articulation Office at Delta College. Once the student has completed six or more academic credits with a "C" (2.0) or better, the Articulation Office will request the Records Office to apply the articulated credit(s) to the student's transcript. No tuition or fees are charged for articulated credit.

The schools currently involved are:

Associated Builders and Contractors, Inc.
Bay City Western High School
Bay Arenac Career Center
Bay City Central High School
Birch Run High School
Bridgeport High School
Caro High School
Chesaning High School
Genesee Area Technical Center
Grand Blanc High School
H. H. Dow High School
Heritage High School
Howell High School
Huron Area Technical Center
John Glenn High School
Marlette High School
Mayville High School
Merrill High School
Midland High School
Mt. Pleasant Area Technical Center
Oakland Technical Center
Pinconning High School
Reese High School
Saginaw Career Complex
Standish Sterling High School
Swan Valley High School
Tuscola Area Technology Center
Unionville-Sebewaing High School

For Post-Secondary Articulation information please see page 27.

Further information may be obtained from the schools listed above, or from the Delta College Articulation Office, (517) 686-9070, from Midland (517) 495-4000, ext. 9070. More detailed information is published on the Articulation webpages found at: <http://www.delta.edu/~artic>.

An Employer's Opinion

"I came to Delta College's Placement Office because I wanted to fill a technical position in our engineering department. I found the AutoCAD knowledge of the Delta students very high and would recommend Delta to any employer."

Gary Scott, Means Industries, Saginaw

Grading System

Grades

The grading system at Delta College is a letter system with associated quality points which are used to compute cumulative grade point averages. You will receive one final grade in each course taken.

Letter Grade	Meaning	Grade Points Per Credit
A	Excellent	4.0
A-	Excellent	3.7
B+	Good	3.3
B	Good	3.0
B-	Good	2.7
C+	Average	2.3
C	Average	2.0
C-	Average	1.7
D+	Poor	1.3
D	Poor	1.0
E	Fail	0.0
P	Pass (C/2.0 grade or above)	Not included in computing credits and grade points
NC	No Credit (C-/1.7 or below)	
I	Incomplete	
X	Audit	
W	Withdrawal No Evaluation	
WP	Withdrawal Passing	
WE	Withdrawal Failing	
Z	In Progress	

Note: The College Community Services Division also uses the above letter grades for their courses; however, points are not awarded or grade point averages maintained for Community Services courses.

Final Grades

Final grade reports are generally mailed to you within one week of the official ending date of each semester. Final grades are listed on your official academic transcript, which is maintained by the Records and Registration Office. Your final grade is the responsibility of individual faculty members. Instructors may exercise their own prerogatives with respect to your grades as long as these prerogatives do not conflict with other institutional policies.

I - Incomplete

An instructor may assign an Incomplete grade if you have not fulfilled all course requirements when final grades are assigned. An Incomplete is a temporary grade given only when your work has been of **acceptable quality** near the end of the 15-week semester, but the required amount has not been completed because of reasons satisfactory to the instructor.

Requirements of a course are to be completed no later than December 1 for Incomplete grades issued in the Winter and Spring/Summer Semesters and April 1 for Incomplete grades issued in the Fall Semester. In exceptional circumstances, additional time may be granted for completion of course work by notification from the instructor to the Director of Records and Registration in writing.

X - Audit

When you enroll in courses on an Audit basis, a grade of "X" will be recorded on your permanent record, if general requirements of auditing are fulfilled, and no credit will be earned. Some appropriate reasons for Auditing are professional enrichment or personal enjoyment. Tuition and fees are the same as for regular credit courses and a student number is required. Instructor Audit objectives must be fulfilled. Courses taken on an Audit basis are not applicable toward fulfillment of Associate degree or Certificate requirements. You must complete an Audit Request Form in the Records and Registration Office **no later than the end of the Delta College official refund period.** (See each semester's class schedule booklet). For the deadline to request an Audit for courses that meet one week or less, you should contact the Records and Registration Office. Any questions regarding the course Audit option should be directed to the Records and Registration Office.

Audited courses do not count in determining student eligibility for financial aid. If you are receiving financial aid, you should contact the Office of Financial Aid before changing a course from academic credit status to Audit status. Audit grades will **not** be used in determining academic load for veterans' certification.

W - Withdrawal

This grade is used when you officially withdraw from a course from the 12th calendar day through mid-point of a course. Additionally, your instructor has the **option** of withdrawing you from a course up to mid-point if:

1. You have been absent from an excessive number of classes **or**
2. You lack the course prerequisites.

WP/WE - Withdrawal Passing/Failing

If you officially withdraw from a course after mid-point through the end of the 12th week (4/5's of course length), a grade of "WP" (passing course work with a grade of "D" or better at the date of withdrawal) or "WE" (failing course work at the date of withdrawal) will be assigned to you by the instructor.

For information on the drop and withdrawal policies and procedures, see Section II, The Enrollment Process, Registration.

Z - In Progress

This grade is used for those classes which begin in one semester and continue into another. A final grade with associated quality points will be awarded at the official completion of the class.

Grade Change Procedure

Once recorded by the Records and Registration Office, grades will be changed only if an official Grade Change Form is completed and signed by the instructor and the appropriate academic Dean. The Grade Change Form must be received **no later than the end of the next semester following grade issuance.** This policy does not apply to grade changes under consideration via the Disputed Grade Policy.

P/NC - Pass/No Credit Option

The Pass/No Credit grade option is available for several courses at Delta College. If you are interested in this grading option in place of the usual "A" through "E" grading system, you should declare this choice at registration or **no later than** the end of the 12th week of the semester (6th week of a session) by completing a form at the Records and Registration Office. Courses approved for the P/NC grade option are listed in each semester's Schedule of Academic Classes booklet.

Guidelines and Procedures for P/NC Grade Option:

1. Grades on the P/NC system are not included in computing the semester or cumulative point average.
2. Grade of "P" (Pass): Credit is granted and represents performance at or above the "C"/2.0 level.
Grade of "NC" (No Credit): No credit is granted and represents performance at or below the "C"/1.7 level.
3. You may not apply more than a total of 12 credits of P/NC course work toward Delta graduation requirements.
4. Enrollment on a P/NC basis is recorded with the Records and Registration Office.
No indication of your P/NC status will be communicated to a faculty member by any office of the College.
5. A letter grade will be on file in the Records and Registration Office, but only "P" or "NC" will appear on your transcript.
6. If you desire to have any grades converted from P/NC to letter grades, you may do so by applying to the Records and Registration Office **no later than the end of the following semester after the P/NC grade was issued.**
7. Course prerequisites and other criteria for enrolling in any course shall be determined by the Department or Division offering the course and apply equally to both the traditional and the P/NC grading systems.
8. If you are planning to transfer, you should first check with a Delta counselor regarding the acceptance of the P/NC grade option for specific courses by the transfer institution.

Grade Point Average (G.P.A.)

A student's Grade Point Average is determined by dividing the number of credits attempted into the quality points.
For example:

	Attempted	Grade	Quality Points
ENG 111	3	B	3x3=9
MTH 107	3	B	3x3=9
BIO 111	4	C	4x2=8
SOC 211	3	A	3x4=12
	13		38

$$\text{G.P.A.} = 38 \text{ divided by } 13 = 2.92$$

Credits Attempted - Credits for which the student enrolled and for which grades of A through E were given. Credits for courses in which grades of P, W, WP, WE, I, X, and Z are given are not included here.

Credits Earned - Includes all academic credits taken at Delta for which final grades of A through D were recorded.

Credits transferred from other institutions or earned by examination are not included in cumulative averages.

Non-Credit Courses - Non-credit courses are not included in cumulative averages.

Quality Points

The number of grade points earned in a course is the number of credits multiplied by the number of grade points corresponding to the letter grade received. For example, a grade of B+ in a four-credit course equals 13.2 grade points ($3.3 \times 4 = 13.2$).

Repeated Courses

You may not enroll in a course for credit or audit, whether completed or not, more than three times. Exceptions to this policy requires authorization by the appropriate Division Chair or Academic Dean.

The highest grade received by you for any given course shall be the grade used in computing the cumulative grade point average and the number of credits shall only be counted once in the total number of credits attempted. All grades received by you in a given course shall, however, **remain on your academic transcript** but will be designated by the Records and Registration Office as having been repeated, so it is clear that only the highest grades earned are being counted in cumulative totals.

Academic Transcripts

Your transcript is the College's official academic record of your work. Your record is updated at the close of each semester. Your academic record includes all academic courses attempted and completed (course titles, credit hours, final grades and honor points), semesters enrolled, transfer credit accepted, courses waived, credit awarded by examination or advanced placement, certificates/degrees awarded, honors, and academic probation/dismissal status. Grades of all Community Services course work are also maintained by the Records and Registration Office. There is no charge for transcripts up to a maximum of 10 per day, however, there is a \$10 charge for same-day service. Copies will be sent upon your written request to anyone designated by you. Ordinarily transcripts are mailed within one week. Transcript copies will not be furnished if you have delinquent accounts at the College.

Attendance Policy

It will be necessary for certain groups of students (e.g., veterans, financial aid recipients) to adhere to attendance requirements imposed by the policies of external regulatory agencies beyond the following stipulated by Delta College:

1. Attendance is expected at all courses for your maximum achievement.
2. It is your responsibility to make arrangements for missed course work.
3. The College recognizes that on occasion special College-connected events will conflict with scheduled course/laboratory times. Before those special occasions, you will need to work with the instructor to make alternate arrangements.
4. Individual instructors determine attendance rules and will explain those rules at the initial course meeting and/or in the course syllabus.

Change of Student Information

A change in your name, address, or program needs to be reported immediately to the Records and Registration Office or the Admissions Office. Communications and Grade Reports will be sent to the latest address on file. Legal name changes, other than marriage, or a Social Security number change require proper documentation.

Classification of Students

The classifications below apply only to academic students pursuing Certificate or Associate degree programs. Community Services credit hours are not included.

Freshman	29 or less credits earned
Sophomore	30 or more credits earned
Full-Time	Enrolled in 12 or more credits during a semester
Part-Time	Enrolled in 11 or less credits during a semester

Financial Aid Attendance Information

By federal regulations, attendance follow-up must be done for financial aid recipients who drop to 0 credits, who end the semester with all "E" grades or a combination of "E" and "W" grades, and for whom instructors process instructor-initiated drops. In all cases, if it is found that students never attended, aid will be adjusted, funds will be returned to appropriate aid programs, and the students will be billed.

Plagiarism and Honesty in Academic Work

The principles of truth and honesty are recognized as fundamental to a community of scholars. The College expects that both faculty and students will honor these principles and in so doing will protect the validity of College grades. This means that all academic work will be done by the student to whom it is assigned without unauthorized aid or falsification of any kind. Faculty, for their part, will exercise care in the planning and supervision of academic work so that honest effort will be positively encouraged. Faculty will point out to students acceptable forms of incorporating the thoughts of others into their work.

It is expected that:

1. No student will knowingly, without proper authorization, procure, provide, or accept any materials which contain questions or answers to any examination to be given at a subsequent time. The unauthorized possession of such materials will be considered prima facie evidence of a violation of this provision.
2. No student will, without proper authorization, complete, in part or in total, any examination or assignment for another person or allow such examination or assignment to be completed, in part or in total, by another person.
3. No student will knowingly plagiarize or copy the work of another person and submit it as his or her own.
4. No student will knowingly misrepresent performance or falsify documentation related to the performance of any activity required to complete course/program objectives.

If a question of academic honesty should arise, the first efforts toward the solution of the problem will be the responsibility of the faculty involved. The student will be notified of the allegation as soon as it becomes known to the faculty member and given a reasonable opportunity to respond to the faculty member before judgment is reached. Any penalty assessed will be at the discretion of the faculty member, who will take care to match the severity of the penalty with the seriousness of the situation. In any instance in which a failing grade in a course is given based on a charge of academic dishonesty, the faculty will notify the Division Chair and the student in writing of the circumstances and the evidence on which the action was based.

The student may appeal, through the Disputed Final Grades policy (see page 91), any grade affected by a charge of academic dishonesty.

Semester Honors

Each semester a President's List is issued of all students who receive a grade point average of 4.0 for that semester; a Vice President's List for all students who receive 3.7 through 3.99 grade point averages; and a Dean's List of students who receive 3.5 through 3.69 grade point averages. To be eligible, you must complete at least 6 credit hours in a Fall, Winter or Spring/Summer Semester. Courses taken on the Pass/No Credit option do not apply.

Disputed Final Grade Policy

If you do not agree with the final grade you receive in a course, we have a process available to you called Grade Appeal. Since a final grade assignment is made on an individual basis, this procedure can be invoked only by individuals questioning the appraisal of their own academic progress and cannot be invoked by one individual on behalf of a group of individuals.

Every effort will be made to resolve conflicts through informal discussion with the involved parties. You are encouraged to contact the Grade Ombudsman for a clear understanding of the process. All parties involved are encouraged to keep the time intervals between steps as short as possible. The time limits identified are considered maximum unless altered by the Grade Ombudsman, who has the responsibility to see that deadlines are met and the right to extend them under extraordinary circumstances. The Grade Ombudsman is a non-faculty member of the Senate Assembly who is appointed by the President of the College in consultation with the Faculty Executive Committee. Currently, that person is Anne Greenleaf, D-100, phone 686-9320. **The following outlines the basics of the policy. A complete copy is available from the Grade Ombudsman.**

Informal Process

A student who wishes to discuss concerns regarding a grade will contact the faculty member and/or the Division Chair within 25 calendar days following the date the grade is due in the Records and Registration Office at the end of the semester. The faculty member and the student will attempt to resolve the differences. The Division Chair may be asked to assist with the conflict resolution.

Formal Process

1. To appeal formally a final grade for a course, the student must contact the Grade Ombudsman within five calendar days after the conference with the faculty member and/or Division Chair.

2. The student will write, within five calendar days of meeting with the Grade Ombudsman, a formal statement that explains the circumstances of the disputed grade. The statement will be given to the faculty member.

3. The faculty member will write a statement of response and submit it to the Division Chair.

4. The faculty member's response together with the student's statement are to be submitted to the Chair of the Division within five calendar days of receiving the student's statement. The grade Ombudsman will supply the student with a copy of the faculty member's statement.

5. The Chair will meet with the student and the faculty member within five calendar days of receiving the student's and faculty member's statements to discuss the grade appeal.

6. The Chair will take one of the following actions within two calendar days of the meeting with the student and the faculty member:

1. Dismiss the appeal and the grade remains.
2. Recommend a change of grade, or a change in the grade under specific conditions which are defined by the Chair. The recommendation of the Chair may be appealed to the Grade Appeal Board by either the faculty member or the student within three calendar days of receiving the Chair's recommendation.

7. The Grade Appeal Board is composed of seven members: four faculty members, (three appointed by the Faculty Executive Committee and one appointed by the Chair from the Division which offers the course in which the grade is being appealed); the appropriate academic Dean; one Student Services representative appointed by the Vice President of Student Services; and one student from the Student Senate Committee.

8. The Grade Appeal Board will meet within 10 calendar days of receiving the appeal at a time when both parties are available to respond to the Board's questions. Under special circumstances, alternates may be appointed to the Grade Appeal Board by the person originally responsible for the appointment of that position.

9. By majority vote, the Grade Appeal Board will make one of the following decisions within two calendar days of the meeting:

1. The appeal is dismissed and the grade remains.
2. The grade dispute is resolved by changing the grade, or changing the grade under specific conditions. All members of the Board will determine if the grade should be changed and the faculty members on the Board will decide the specific grade to be awarded.

10. Decisions rendered by the Grade Appeal Board will be final.

Your Academic Status

Standards of Academic Achievement

1. A minimum cumulative grade point average of "C" (2.0) must be achieved to graduate with an Associate degree or Certificate.
2. A student making **Satisfactory Progress** is defined as:
 - a. Satisfactory/No Conditions - A student whose cumulative Grade Point Average satisfies the **Academic Status Scale**.
 - b. Academic Caution - A student whose cumulative Grade Point Average (GPA) satisfies the **Academic Status Scale** but is below 2.0 and the credit hours attempted are less 45.
3. A student making **Unsatisfactory Progress** is defined as:
 - a. Academic Probation - A student who has attempted 13 or more credit hours and whose cumulative GPA is below the required grade point average as indicated on the **Academic Status Scale**.
 - b. Academic Suspension - A student who has been on Probation for at least two Academic Semesters or who has not met the conditions of their **Educational Development Plan**.

Table for Determining Academic Status

Following is the table for determining your academic status at Delta College. To use the table: 1) locate on your grade report or academic transcript your cumulative grade point average and the total number of credits attempted; 2) find the corresponding credits attempted in the left-hand column of the table; and 3) read across the page to your right until you locate the column which includes your current cumulative grade point average. This column heading indicates whether you are in the Satisfactory Progress or Academic Probation.

Academic Status Scale			
Credit Hours Attempted	Satisfactory Progress		Unsatisfactory Progress
	No conditions	Caution	Probation
	GPA	GPA	GPA
0 - 12.9	1.50 - 4.0	0.00 - 1.49	
13.0 - 23.9	1.75 - 4.0	1.50 - 1.74	0.00 - 1.49
24.0 - 44.9	2.00 - 4.0	1.75 - 1.99	0.00 - 1.74
45.0 or more	2.00 - 4.0		0.00 - 1.99

Procedures for Academic Caution, Probation, and Suspension

- I. Students placed on ACADEMIC CAUTION or ACADEMIC PROBATION:
 - A. At the end of the Spring and Fall Semesters will be notified of their status and assigned to a member of Student Services or Faculty.
 1. Caution: strongly urged to seek the **assistance** of an assigned member of Student Services or Faculty.
 2. Probation: required to meet and determine **assistance** with an assigned member of Student Services or Faculty.

B. At the end of the Winter Semester the student will be notified of their status and be required to develop an **ACADEMIC SUPPORT PLAN**¹ with an assigned member of Student Services or Faculty. An approved Academic Support Plan must be on file in the Records & Registration Office prior to the student being allowed to enroll for Fall Semester.

II: Students placed on ACADEMIC SUSPENSION:

After being on Academic Probation for at least two semesters or not meeting the conditions of their Academic Support Plan students will be notified of their status by the Director of Records and Registration. They will be denied enrollment for two consecutive semesters.

1. Students placed on suspension that may have mitigating circumstances² may appeal their suspension to a Dean or his/her designee. If the appeal is successful an Academic Support Plan will be required prior to registration.
2. Students enrolling after being suspended for two semesters will be required to meet with an assigned member of Student Services or Faculty and have a new Educational Development Plan on file in the Records & Registration Office prior to registration.

¹ACADEMIC SUPPORT PLAN (ASP)

An Academic Support Plan is a blueprint that outlines actions to be taken by the student that will assist a student to improve their academic performance. It could/should include such things as:

- a. Future course selection that will provide for maximum success.
- b. Number of credits to attempt per semester (based on data presented by student).
- c. Assistance e.g. tutoring, selecting peer mentored classes, P.A.L. program, meeting with instructor.
- d. Time management strategies.
- e. Other services as appropriate e.g. handicapped services, counselors, career center, etc.

²MITIGATING CIRCUMSTANCES

Mitigating circumstances are circumstances beyond the **reasonable control** of the student, such as injury or illness, death of a relative, or other special circumstances.

Special circumstances are defined to include the above with documentation, or such things as documented abuse, divorce, illness/surgery of spouse or child, or documentation that the student was required to drop out to care for a parent or was involved in a serious automobile accident, or was incarcerated. "Documented" is the operative word here.

Items not considered are lack of transportation, "I was just young and stupid," "I wasn't serious, but I am now," etc.

Fresh Start Policy

If you wish to re-enroll after an absence from Delta College of three or more years you may submit a request to the Director of Records and Registration to have your GPA recomputed using only grades earned after enrollment. If the request is approved, all courses previously taken at Delta College will remain on your permanent record/transcript. All course grades prior to re-enrollment will be converted to P/NC grades. Courses with grades of A, A-, B+, B, B-, C+, C will become P grades with credit; all other course grades will become NC grades without credit. **You may only use the Fresh Start Policy once.** The cumulative GPA and Academic Achievement policy conditions will be computed using all grades earned from the point of re-enrollment. **Note:** Regardless of the number of P grades resulting from this policy, a maximum of twelve (12) credit of P grades may only be applied toward Delta College graduation requirements. You are advised to discuss this option with your Counselor prior to the request.

Academic Status for Financial Aid Recipients

Standards of Academic Progress for Financial Aid Recipients

Students must be making satisfactory academic progress toward the completion of a Certificate or Associate degree to be eligible for financial aid.

Standards of Academic Progress for Financial Aid Recipients are applied to all students receiving financial assistance after they have attempted 12.9 credits at Delta College. All semesters and courses in which students registered at Delta College are included in determining Satisfactory Academic Progress, regardless of whether or not the students received financial aid for those semesters and courses.

I. Standards of Academic Progress for Financial Aid Recipients

- A. Making Satisfactory Academic Progress is defined as earning a cumulative grade point average (GPA) consistent with the Academic Status Scale below. In calculating the GPA on this Scale, all credits for which students ever enrolled at Delta College are included (grades A through E, P, NC, I, W, WN, WP, and WE plus all repeated courses).

ACADEMIC STATUS SCALE

Enrolled Delta Credits	Minimum GPA Required
0-12.9	0.00
13-23.9	1.50
24-44.9	1.75
45 or more	2.00

- B. Making Satisfactory Academic Progress is also defined as having satisfactorily completed 67% or more of all credits in which students have ever enrolled at Delta College.

1. Grades of A, A-, B+, B, B-, C+, C, C-, D+, D, or P are considered to be satisfactory completions.
2. Grades of W, WN, WP, WE, NC-No Credit, I-Incomplete, and E-Failure are **not** considered to be satisfactory completions.
3. For students with repeat grades, the lower grade is considered to be an unsatisfactory completion and the higher grade is considered to be a satisfactory completion.
4. For students choosing the Fresh Start option, grades changed to P are considered to be satisfactory completions. Grades changed to NC are **not** considered to be satisfactory completions. (Students choosing this option should be aware that grades of C-, D+, and D, which are considered as satisfactory completions, will be converted to NC grades, which are not considered to be satisfactory completions.)

- C. Satisfactory Academic Progress also requires that financial aid recipients complete the Certificate or Associate degree within a time frame which, by federal regulation, is 150% of the published length of the program. For example, if a student is in an Associate degree program that requires 62 credits, the degree must be completed in a maximum of 150% of 62 credits, or 93 credits including both attempted and completed credits. (Students should consult the Delta College Catalog, Section III, Programs of Study, to find the number of credits required in their Certificate or Associate degree program, then multiply that number by 1.5 to determine the maximum number of credits.)

1. When students reach the maximum number of credits, financial aid will be terminated.
2. All semesters are taken into consideration when determining the maximum number of credits, whether or not students received aid during those semesters.
3. All grades (A through E, P, I, NC, W, WN, WP, and WE) and repeated courses are counted in determining the maximum number of credits.

4. Transfer credit must be taken into consideration when calculating the maximum number of credits; therefore, all credits up to a total of 38 that are transferred into Delta College will be calculated into the maximum number of credits for an Associate degree and all transfer credits up to a total of 15 will be calculated into the maximum for a Certificate.

Academic records of aid recipients are reviewed by the Office of Financial Aid prior to awarding for the standard academic year (Fall and Winter Semesters) to ensure that Standards of Academic Progress for Financial Aid Recipients continue to be met. Records are reviewed again prior to awarding for the Summer Semester. Additionally, academic records for loan recipients are checked prior to each disbursement. Students receiving aid whom the College places on Academic Probation between reviews will maintain their aid eligibility (but not their loan eligibility) for the probational semester(s) until the next review, providing them with the opportunity to improve their academic records and once again meet Standards. If Standards of Academic Progress for Financial Aid Recipients are not met at the time of the next review, financial aid will be terminated.

II. APPEALS

- A. Students who have been terminated from further financial aid for failure to meet Standards of Academic Progress have the right to appeal. All appeals must be submitted in writing on the Satisfactory Academic Progress Appeal Form to the Office of Financial Aid. Appeals must be received no later than one week before the semester begins. Appeals received after that time will be considered to be appeals for the following semester, unless the students are officially registered in classes (tuition and fees are paid and students are in attendance). Students submitting appeals should state the reasons why satisfactory progress was not made and discuss actions that have been or will be taken to make satisfactory progress in the future. **Documentation supporting the reasons for the appeal must be attached. Appeals submitted without documentation will not be considered.** Mitigating circumstances beyond the reasonable control of students, such as injury or illness, death of a relative, or other special circumstances may be grounds for successful appeals.

1. If appeals are approved, students will receive an additional probational semester of aid during which they must **EITHER** complete all courses in which they register with grades of C (2.0) or better (no C-, D+, D, E, or NC grades), and with no Withdrawals (W, WP, WE) and no Incompletes (I), **OR** once again meet the Delta College Standards of Academic Progress for Financial Aid Recipients. At the end of the semester, grades will be checked.
2. If students have the met Standards of Academic Progress for Financial Aid Recipients, aid will once again be awarded. If students have not met these Standards, but have met the conditions stated in No. 1 above, further aid will be granted on a probational semester-by-semester basis. Grades will be checked at the end of each semester before aid is awarded for the next semester to ensure that the student is continuing to make academic progress. This process will continue until such time as the student once again meets the Standards of Academic Progress for Financial Aid Recipients. If it should be found that students have not made academic progress during one of these probational semesters, aid will be denied and the students will have to attend at their own expense until such time as the Standards of Academic Progress for Financial Aid Recipients are once again met.

- B. If the first appeal is not resolved to the satisfaction of the student, a second appeal may be made in writing to the Director of Financial Aid, who will convene the Financial Aid Advisory Committee the first week of each month to review the second appeals. The Director will inform the student of the Advisory Committee's decision, which will be considered to be final.

Graduation Requirements

Degrees Granted by Delta College

- Associate in Arts
- Associate in Science
- Associate in General Studies
- Associate in Applied Science
- Associate in Business Studies
- Dual Degree

If your attendance has been **continuous** in the same program you may, for the purpose of graduation, elect either the program in effect at the time of your first registration at Delta or the program in effect at the time of your application for graduation. **Continuous attendance is defined as attending a minimum of one semester during each academic year since your first registration or when you officially declared your program of study.** If your attendance has not been continuous, you must follow the program in effect at the time of your readmission.

Courses numbered below 100 do not count towards graduation.

A maximum of 38 semester hours of transfer credit may be applied toward a Delta College Associate degree.

Associate Degree Requirements: Students must complete all basic degree requirements, plus specific requirements in one of the Associate degrees listed. All financial obligations to Delta College must be fulfilled before a student is issued a diploma and/or certificate.

Basic Degree Requirements

1. Earn a 2.0 minimum cumulative grade point average in an Associate degree program. Students in the occupational curricula must earn a minimum of "C" (2.0) in specified courses. These courses are identified in Section III, Programs of Study.
2. Earn a minimum of 62 credits.
3. Successfully complete six credits in content-area writing courses.*
4. Earn a minimum of two credits in lifelong wellness activity courses.
5. Successfully complete an approved course in American government: POL 103, POL 111, POL 212 or HIS 103.
6. Earn a minimum of 24 credits by instruction while in attendance at Delta College. You must earn the final credits at Delta to complete a degree. **Exception:** If 52 or more credits have been completed on a degree program at Delta, the final credits (maximum 12), if approved, can be earned through the Guest credit option at other institutions and transferred back into Delta.
7. File an application for an Associate degree and/or Certificate with the Records and Registration Office by mid-semester of the final semester of your course work.
8. You cannot apply more than a total of 12 credits of P/NC course work toward graduation requirements.
9. Delta College reserves the right to require students to successfully complete "key courses" in a program within a stated time frame. This may require you to repeat certain courses, even though a passing grade was previously earned. A "key course" is one whose content is essential to skills development and successful performance and where course content is likely to significantly change over time, as determined by divisions.

*Effective with the Fall Semester 1988, all entering students (those with no prior Delta credits) must complete six credits of writing across the curriculum courses to fulfill graduation requirements. Courses are designated by a "W" next to the course code, such as POL 103W, in the Schedule of Academic Classes booklet. Students with previously-earned degrees from accredited colleges and universities and students enrolled prior to Fall 1988 who have not maintained continuous attendance are exempt from this policy. College composition courses may not be used to fulfill the College writing requirement.

Statement of General Education

General Education is the process by which a student acquires the core knowledge and fundamental skills to become an educated person and life-long learner. CORE KNOWLEDGE is the understanding and appreciation of the social, cultural, technological and scientific developments of society. The EDUCATED PERSON has the ability to apply this core knowledge to function effectively and creatively in every aspect of life. The LIFE-LONG learner is able to both update this core knowledge and develop individual potential in a dynamic environment. General Education, therefore, provides the framework essential to the survival and success of our society.

Certificate Requirements

1. Earn a minimum of 24 credits (a minimum of 15 credits must be completed at Delta) and a 2.0 or above G.P.A.
2. Complete specific courses in an occupational program. See Section III, Programs of Study.
3. Be enrolled at Delta the semester in which Certificate requirements are completed. Any exception to this must be approved by the Vice President of Instruction and Learning Services.
4. Fulfill Basic Degree Requirements Nos. 7, 8, and 9 listed on the previous page.

Associate in Arts Degree (A.A.) Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent.
3. Satisfactorily complete 8 credits minimum in each of Groups I, II and III listed below.

Associate in Science Degree (A.S.) Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent.
3. Satisfactorily complete 8 credits minimum in each of Groups I and II plus 20 credits minimum in Group III listed below.

Group Requirements for Associate in Arts and Science Degrees

You must complete courses from at least two subject areas listed in each of Groups I, II, and III

Group I: Humanities

Art: ART 100A, 151, 152, 251, 252, 255, and 258 only
French (FR)
German (GE)
*History: HIS 111 and 112 only
Interdisciplinary Humanities (IHU)
Literature (LIT)
Music: MUS 100, 111, 112 and 115 only
Philosophy (PHL)
Photography (PHO)
Russian (RUS)
Sign Language (SL)
Spanish (SPA)
Speech: SPH except SPH 100 and 148

Group II: Social Science

Child Development: CD 116 only
Economics (ECN)
*Biology: BIO 230 only
*History (HIS)
*Geography (GEO)
Political Science (POL)
Psychology (PSY)
*Sociology: SOC 200-level courses

Group III: Natural Science

At least one lab science of 15 contact hours or more must be taken.
Astrology (AST)
Biology (BIO)
Chemical Technology (CT)
Chemistry (CHM)
Chemical Process Industry (CPI)
Computer Science (CPS): All except CPS 108, CPS 160, CPS 286
Environmental Science: ENV 230 only
*Geography: GEO 100 and 111 only
Geology (GLG)
Interdisciplinary Science (SCI) All except SCI 099
Mathematics: MTH 110 and above only
Physical Science (PSC)
Physics (PHY)
*Sociology: SOC 230 only

Specific major program requirements and acceptable courses within the group requirement areas differ among transfer colleges and universities. It is recommended that if you are planning to transfer, you should consult with a counselor to ensure that your planned course work meets the requirements for graduation from Delta College as well as specific requirements at other institutions into which you may wish to transfer.

* **Note:** HIS 111 and 112 may be included in either Group I or Group II, but may not be counted in both groups; GEO 100 and 111 may be included in either Group II or III, but may not be counted in both groups; BIO 230 and SOC 230 may be included in either Group II or III, but may not be counted in both groups.

Associate in Applied Science Degree (A.A.S.) Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent.
3. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs of Study.

Associate in Business Studies (A.B.S.) Degree Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or business communications as required by specific curricula.
3. Satisfactorily complete all courses listed in one of the Delta College business occupational curricula. See Section III, Programs of Study.

Associate in General Studies (A.G.S.) Degree Requirements

This degree will meet your needs if your goal is self-enrichment and you are not following a specific occupational or transfer program. All courses offered for academic credit at Delta College are applicable to this degree as per course descriptions. Because of the limited transferability, or in some cases non-transferability, of this degree, it is strongly suggested that you discuss this option with a counselor and consider fulfilling the Group Requirements.

1. Earn a minimum of 62 credits.
2. Earn a 2.0 minimum cumulative grade point average.
3. Fulfill Basic Degree Requirements Nos. 3, 5, 6, 7, 8 and 9.

Dual Associate Degree (A.A.S. & A.B.S.) Requirements

Dual Associate degrees are available in several occupational fields. The requirements are generally completed simultaneously. Your diploma will list both degrees: Associate in Applied Science (health care curricula) and Associate in Business Studies: Business Management

1. Fulfill Basic Degree Requirement.
2. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs of Study.
3. Satisfactorily complete an additional 24 credits minimum, as prescribed for the approved dual degree.
4. A student with no prior college degree would have to earn a **minimum** of 86 credits to earn a Dual Degree (62 for the Health Degree and 24 for the Business degree).

Students who have earned a degree previously may not use courses from that degree to satisfy the requirements of a "Dual Degree". It is possible that a student's previous degree may have included one or more of the required business courses (GB 153, 245). They do not have to retake such classes, but must replace them from the list of approved business courses under the dual degree to complete an additional 24 credits for the Dual degree.

Subsequent and Simultaneous Associate Degrees

Associate degrees can be earned from Delta College simultaneous or following the first earned degree; however, when you complete two or more curricula in the same Division with a difference of less than 24 credits, you will receive only one Associate degree and the transcript shall indicate that you have completed requirements in two or more curricula. Candidates for subsequent degree(s) or simultaneous must meet the following requirements:

A. General Requirements

1. Satisfactorily complete a planned curriculum in one of the following degrees: Associate in Arts, Science, Business Studies, or Applied Science.
2. Earn a minimum of twenty-four (24) additional semester hours of credit by instruction at Delta College. Accordingly, the minimum number of credits earned must equal the credits required for the first degree plus 24.
3. Fulfill Nos. 1, 7, and 9 of the Basic Degree Requirements.

B. Subsequent Associate Degree Requirements

1. Already have earned an Associate, Baccalaureate, or higher degree from a "regionally accredited institution". Previously earned credits will be evaluated for transfer to this degree.
2. Basic Degree Requirements 3, 4, and 5 will be waived for candidates with a Baccalaureate or higher degree from a regionally accredited institution, unless occupational curricula competencies specify otherwise.

C. Simultaneous Associate Degree Requirements

1. While working on one degree at Delta College, students may complete courses applied to a second Associate Degree. Therefore, credits earned beyond those needed for the first degree may be applied toward the second degree.
2. When the student completes two or more curricula in the same Degree (Associate in Arts, Science, Business Studies, or Applied Science) with a difference of less than twenty-four (24) semester hours of credit, the student will receive only one (1) Associate Degree and the transcript will indicate that the student has completed requirements in two or more curricula.

Commencement

One of the most memorable moments in your life will be receiving your Certificate or Associate degree from Delta College. You will want to attend Commencement, which will highlight this special moment for you and your family. Sometimes students are unaware of the special importance of attending Commencement. Relatives and friends take particular pride in seeing you achieve this goal. Give your family and friends the special pleasure of seeing you graduate from Delta College.

Although you may complete graduation requirements at the end of the Fall or Spring Semester, Commencement ceremonies are only held once a year at the end of the Winter Semester. Diplomas are mailed to you by the Records and Registration Office approximately four weeks after the end of the semester in which you complete your requirements.

The Commencement Program and your academic transcript will carry special designations if you complete your Associate degree with an outstanding academic record according to the following cumulative grade point averages:

- 3.50 - 3.69 Honors
- 3.70 - 3.89 High Honors
- 3.90 - 4.00 Highest Honors

Awards

Rowleys, Inc. Award

Given by Rowleys, Inc., recognizes the Automotive Service Technology graduate with an outstanding academic record.

Board of Trustees Award

Presented to the graduate who has earned the highest academic average.

William R. Collings Award of Excellence

The Dow Corning Corporation recognizes a graduate with high personal goals, superior citizenship, and potential for leadership.

The Dow Chemical Company, MI Division Award

Recognizes the graduate with the highest accomplishment in science.

Fred E. Dulmage Memorial Award

Recognizes the top ranking graduate in the area of Engineering Technology.

Dr. and Mrs. Donald C. Durman Award

Recognizes a graduate who has demonstrated service and leadership to Delta College and the community.

Eaton Corporation Award

Recognizes the graduate who has achieved a superior scholastic record in mathematics.

English Division Award

Recognizes a graduate with outstanding scholarship in English studies.

First of America Bank Award

Recognizes the outstanding graduate in finance and banking.

Dr. Daniel Kinsey Award

Characterizes athletic achievement, superior scholarship, and consideration for others.

Midland County Bar Association Award

Recognizes the outstanding graduate in criminal justice who plans to enter this field directly or who will continue studies at a transfer institution.

Frances Goll Mills Award

Recognizes the outstanding graduate in nursing.

Morley Brothers Foundation Award

Recognizes the outstanding graduate in business and management.

Interior Design Society Award.

Eastern Michigan Chapter

Recognizes the outstanding graduate in Interior Design.

Citizens Bank Award

Recognizes the outstanding graduate in art who has demonstrated excellence of artistic expression in any field of visual arts.

Seward, Tally, and Piggott, P.C. Pre-Law Award

Recognizes academic achievement and superior citizenship of a graduate planning to pursue further study in the legal profession.

Paul Sowatsky Memorial Award

Recognizes the outstanding graduate in the General Motors Automotive Service Educational Program.

Lola Bishop Whitney Award

Recognizes superior academic achievement and promise in the study of a foreign language.

the Delta Difference

Cindy Martinez

Hometown
Bay City

Major
Criminal Justice/
Corrections

Favorite Performer
Elvis Presley

Last Book Read
Passages

Age
37

High School
Bay City Central

Favorite Food
Pizza

Most Admired Figure
My cousin
Jenny DeLaRosa

Hobbies
Painting, cake
decorating,
baking, hairdressing

Career Goals
To be successful in
the corrections field
and someday be
a warden.



Why did I decide on Delta?

I decided on Delta because it is close to home. I know it is less expensive than most other schools and I have received the one-on-one attention I want.

What do I think is the Delta Difference?

I think the Delta Difference is the instructors. I like the caring they have for their students and also their willingness to help. When I returned to school I felt like a minority because of my age, and I had people tell me I wouldn't make it and wouldn't succeed. But I am succeeding and I am proving them all wrong!


**Delta
College**

We Are Your Opportunity

We are accepting applications.

Call Admissions now.

Get it right at Delta College.

Phones: 686-9093, or from Midland 495-4000, ext. 9093

SERVICES AND OPPORTUNITIES

1. Services and Opportunities
2. Clubs and Organizations



Services and Opportunities

Academic Advising

Location: Main Campus
D-102

Academic advising begins at Orientation when academic advisors and/or counselors assist you in selecting the course or courses that best fit your needs, achievement level, program requirements, and/or interests. See Section II, *The Enrollment Process, Steps to Success* for further information about Orientation.

Advising continues throughout your Delta College experience whenever you stop by Counseling's Academic Advising Walk-In Center or make an appointment in the Counseling Center. The Walk-In Center is there for immediate access to academic advisors for quick answers to your questions. For more involved questions or extensive assistance, make an appointment with your academic advisor or counselor in the Counseling Center, phone 686-9330. For other counseling services see *Counseling Center* in this section of the catalog.



Admissions

Location: Main Campus
D-101

Phone: 686-9093

The Admissions Office should be your first stop at Delta College. The staff will assist you, as a new student, with the application and enrollment processes; issue your student number; take you on a Campus tour; provide you with a College catalog and other Delta materials; and will be able to answer your questions or direct you to the Delta staff member who has the answer. Be sure to contact them early and get started down the right path to becoming a successful student at Delta.



Affirmative Action Office

Location: Main Campus
Lower Level
A-2

Phone: 686-9547

Delta College is guided by federal and state laws and internal policies which provide for equal opportunity in employment and educational programs and activities. The Affirmative Action Office oversees equal employment opportunity (the right of all persons to work and to advance on the basis of merit, ability, and potential) and affirmation action (the means by which the condition of equal employment is achieved), and seeks to ensure that discrimination and sexual harassment do not take place in employment or in any educational programs or activities.

See page 4 of this catalog for the Affirmative Action Statement and Section VII, Regulations and References, Safety and Security Information of 1992 for further information regarding sexual harassment.

You are encouraged to contact Margaret Mosqueda, Affirmative Action Officer at the location and phone listed above if you have any concerns regarding equal employment opportunities, affirmative action, discrimination, or sexual harassment.



African-American Services - see "Multi-Cultural Services"



Assessment/Testing

Location: Main Campus
D-111

Phone: 686-9338

Assessment/Testing Services provides a variety of testing services for new students, currently-enrolled students, business and industry clients, and the community.

As a new student, you will be required to take the ASSET test as part of the Steps to Success Program. See Section II, *The Enrollment Process, Steps to Success* for more information.

If you have had work experience and/or training that you think may be equivalent to content taught in actual College courses, you should look into the Credit for Prior Learning Program, described in Section IV, Academic Policies and Information.

Assessment/Testing Services are available to business, industry, and public service agencies on a contractual basis. Through these contracts, employers are assisted in identifying individuals whose skills best match job requirements. Career assessment is also available for those seeking a job change.

In addition to these services, the Assessment/Testing Services Office is a test site for numerous national certification and licensing exams. Approximately 25 standardized national examination programs are held on Campus each year. Tests include the General Educational Development (G.E.D.) Test for high school equivalency, the ACT exam for high school students entering college, and several professional exams such as the dental assisting boards and the automotive certification tests.



Bookstore

Location: Main Campus
Lower Level
N.W. Corner of Commons Food Court

Phone: 686-9030

Once you've registered for your courses, you'll want to go to the Delta Bookstore to get your textbooks. Textbooks are generally available for students to buy about three weeks before the semester begins. In order to avoid waiting in line and for the best service, buy your books for your courses as soon as you receive your receipt/schedule. Check into buying used books and save 25%.

Refunds: Textbook refunds are given to students who drop a course or have a course cancelled by Delta. Requests for a refund must be made **by the eleventh calendar day of the semester**. If you purchased a new textbook, it must still be new and **unmarked** (no names, erasures, broken bindings) to receive a full refund. Marked and damaged **new** books will be refunded at the used book price. Books purchased **used** will be refunded at the used price.

Buy-Back: The Bookstore will buy-back books at the end of each semester. Students should check posted times and dates in the bookstore. Most books can be resold. Exception: study guides, workbooks, lab manuals, books with fill-in or tear-out pages, and some titles no longer in use at Delta.

In addition to textbooks, the Bookstore sells workbooks, lab manuals, school supplies, drafting equipment, study aids, art materials, sports-wear, greeting cards, college rings, gift items, candy, and snack foods.



Bridge Program for Underprepared Students

Location: Main Campus
J-100

Phone: 686-9163

If your ASSET and/or COMPASS scores reveal that you lack college level reading, writing, or math skills, the Bridge Program can help you to gain the skills that you will need to be successful in college.

Bridge Program courses are taught by outstanding instructors, Delta faculty who have the ability to work with underprepared students. Supportive and helpful counselors and other college staff work closely with Bridge Program instructors to help students to succeed.

Bridge Program courses include the following:

Student Success Series (ABS 97)
Study Skills (ABS 108A)
Basic Math (MTH 102)
Pre-Algebra (MTH 106)
Basic Communications (SPH 100)
Foundations of Science (SCI 99)
Grammar Review for Business (OSE 150)
Introduction to College Reading & Writing (ENG 100)
Applied Spelling Techniques (ENG 104)
Effective Reading and Vocabulary Development I & II (ENG 108 & 109)
Structured Learning Assistance Workshops attached to some Bridge Program Courses provide additional help for students.

Taking one or more Bridge Program courses can help you save time and money for several reasons.

- Bridge students acquire needed skills in the shortest amount of time.
- Bridge students can move on to other courses sooner than students who have to retake courses because they lack necessary skills.
- All students who receive PELL Grant funds are eligible for 30 extra hours of aid for remedial courses such as those offered by The Bridge Program.

The Bridge Program faculty and staff are looking forward to helping you to succeed at Delta. Please contact us if you have any questions.

Broadcasting

Location: **WDCQ-TV 19 & WDCP-TV 35 & FM 90.1**

Main Campus
Lower Level
A-90

Phone: 686-9350

Delta College is fortunate to be able to serve our students and community through our television and radio facilities which transmit award-winning national and local programs. WDCQ-TV 19 has been serving the residents of the Tri-Cities since 1964; WDCP-TV 35, located in Bad Axe/Ubly, began broadcasting at the end of 1986; WUCX-FM 90.1 went on the air in the fall of 1989.

Quality TV 19/35 offers educational, cultural, and public affairs television programming (national, state, and local) that addresses community concerns and needs. In 1989, Q-TV became the first public or commercial television station in the Tri-City region equipped to transmit programming in stereo. In addition, a variety of TV 19/35 programs are broadcast with closed captions for the hearing-impaired viewers. Q-TV also provides Spanish language translation of certain programs and descriptive video services (DVS) for the visually impaired.

Delta College shares in the operation of public radio station WUCX-FM 90.1 with Central Michigan University. Listeners enjoy programs from National Public Radio, American Public Radio, and other major program sources, as well as local productions spotlighting jazz and recent trends in new music.

Delta College Quality Public Broadcasting is more than TV 19/35 and FM 90.1. It is also involved in the Broadcasting/Telecommunications (BRT) Program, which is taught by staff and other members of the community. Course work leads to an Associate degree and students gain valuable hands-on experience both by working on locally-originated programs and in broadcasting operations by taking on-air shifts in the Q-TV Master Control Room or FM 90.1 Studio.

In addition, Q-TV coordinates local involvement in the PBS Mathline Project, the nation's first telecommunications-based multi-media educational service aimed at improving math performance. It is also involved in the Ready to Learn Service, using programming and other tools to help achieve the goal that all children will start school ready to learn.



Campus Police

Location: Main Campus
N-102

Phone: 686-9111

If you should need their assistance, the officers of the Campus Police Department are available to you 24 hours a day, seven days a week. They are all certified by the Michigan Law Enforcement Officers Training Council and are Deputy Sheriffs of Bay County. They are charged with the enforcement of all College rules and regulations; rules of student conduct; State, federal, and local laws; and the investigation of crimes and accidents. Their services include: protection of persons and property; traffic control and enforcement; enforcement of parking regulations; public and motorist assists; crime prevention and prevention programs and information; operation of the College Lost and Found; and emergency first-aid.



Career Planning

Location: Main Campus
Lower Level - East
Web Page: <http://www.delta.edu/~jobplace>

If you need assistance in selecting a major, planning a first career or changing careers, be sure to visit Career Planning and Placement Services. Helpful staff can direct you to career/employability information and resources.

The following computerized career guidance systems are also available to help you as you begin planning your career:

System of Interactive Guidance and Information Plus (SIGI-PLUS): lets you examine your values, interests, and activities; identify occupations that match your choices; gather information on various careers; and learn strategies for realistic decision-making.

Michigan Occupational Information System (MOIS): provides you with a list of possible occupations based on your interests. MOIS includes earnings and outlook information in Michigan, as well as educational opportunities, costs, admissions requirements, and programs of study.

EUREKA Micro-Skills Inventory: allows you to select skills you would prefer to utilize eight hours a day, 40 hours a week, analyze your past jobs, and provides you with a personality type, and an occupation idea list.

To utilize these computerized career guidance systems, the numerous CD-ROM programs, and our career/employability resources, visit Career Planning and Placement Services.



Community Services

Location: Main Campus
Lower Level-West
A-76
Phone: 686-9412

Collecting information on social, political, economical and other life trends through a process called environmental scanning has enabled the Office of Community Services to consistently offer new programs that reflect our community's changing needs in areas such as short-term occupational training, personal enrichment and professional development.

Continuing education opportunities are available for the following professions: dental, medical assisting, registered nursing, licensed practical nursing, phlebotomy, health unit coordinator, real estate, chartered property & casualty, underwriting workshops, automotive specialties, American Institute of Banking, American Management Association, radiography, substance abuse, foster parenting, professional engineering, building trades, plumbing trades, electrician trades, and legal secretary.



Conference Services - see "Food & Conference Services"



Cooperative Education

Location: Main Campus
Lower Level
F-40
Phone: 686-9474

If you are interested in working in a job that will give you experience related to your studies, you will want to look into the Cooperative Education Program. This Program is open to students who are majoring in general business studies, business administration, fashion merchandising/interior design, accounting, office/clerical, computer information systems, criminal justice, engineering and science technology, pre-engineering, broadcasting, waste water treatment technology, chemical technology, and science, and are enrolled in at least six credits. Co-op pay ranges from minimum wage to \$12 per hour. Major co-op employers include Dow Chemical North America, Dow Corning Corporation, General Motors Corporation, VA Medical Center, Delta College, and area businesses. As a co-op student, you would usually work between 12-30 hours per week.

To be considered for co-op, you should submit to the Cooperative Education Office a co-op application form and an updated resume. If you are a high school student, submit your final high school transcript. You should also have one year or more of studies remaining at Delta before graduating or transferring. Once you are hired into a co-op position, you will be required to enroll in the appropriate co-op academic course during the Fall and Winter Semesters. The co-op credits are included in the total number of credits required each semester and may be used as elective credits in your academic program.



Corporate Services

Location: International Centre
310 Johnson
Saginaw
Phone: 758-3600

Corporate Services, a workforce division of Delta College, brings training, management, development, and consulting services to business and industry. Product offerings are designed to help businesses realize: increased productivity; optimum employee contribution; high customer enthusiasm; clear commitment to quality; personal and team effectiveness; positive work force relationships; and effective transition management.

Helping customers achieve success through people and technology, and a firm commitment to educate local businesses, has led to our presence in the national and international marketplace, serving over 800 companies in 43 states and 53 countries. Many long-standing relationships — some as long as 16 years — serve as testimony to the commitment we make to our customers, the quality of our instruction, and the strong partnerships we create.

"Counselor's Quote"

Jerry Boehm: Valley Lutheran High School

"I found all the admissions people from Delta to be knowledgeable and easy to work with. I especially appreciate the willingness of the career placement department to work with students who are searching for a direction in their lives. The transition to Delta is easy for students to accomplish."

Counseling

Location: Main Campus
D-102

Phone: 686-9330

Many important decisions and situations will confront you while you are a student at Delta College. You will need to make decisions regarding courses, curricula, and careers. You may become confused and upset or the stresses of your college or personal life may occasionally interfere with your academic achievement. These are the situations for which our counseling staff provides assistance. The staff is available both by appointment and on a walk-in basis. If you need simple, quick information or your questions will take only five or ten minutes to answer, you should take advantage of walk-ins. If your questions require more time or are of a personal nature, then you should make an appointment.

Your first contact with the counseling staff will likely be at Orientation. See Section II, The Enrollment Process, Steps to Success for further information about Orientation. After enrollment, there are many services available to you through the Counseling Center. These include:

Academic Advising: See this Section, Academic Advising.

Personal Counseling: Occasionally you may feel stressed from situations in your life. Counselors can help you to identify and clarify problems and find personal resources to cope successfully. Personal counseling is a strictly confidential relationship between you and your counselor in accordance with Michigan counselor license requirements.

Crisis Counseling: A counselor is available daily for students in crisis. You may go to the Counseling Center on your own or be referred by a staff or faculty member. The counselor will help you clarify the immediate issues and provide support in helping you re-establish balance. If needed, you will be referred to an appropriate agency outside Delta.

Career Guidance: Answers to questions such as, "What career, what major, what college?" are the outgrowth of understanding yourself. They require time and thought; assessing your interests and abilities; realistic planning with career information; and recognizing your own style, purposes, and values. Your counselor can help you with all of this; you can discuss your current situation and your hopes, dreams, fears, and questions. Delta also offers career and life development courses, many of which are taught by the counselors. See Section VI, Academic Course Descriptions, under ABS (Applied Behavior Studies).

Transfer College Information: See Section III, Programs of Study, Transfer Programs and Transfer Procedures.



Criminal Justice Training

Location: Main Campus
G-127

Phone: 686-9108

Delta College has been designated as one of the Regional Criminal Justice Centers in the state by the Michigan Law Enforcement Training Council and is supported by state funding to offer a wide variety of training courses for rural and urban police officers.

The Basic Police Training School offered at Delta for newly-hired officers is required by law. Center in-service training and professional development for currently-employed officers and security personnel includes courses covering topics such as civil liberties, criminal law, traffic radar, disaster control, and white collar crime; specialized one-day seminars and conferences on topics ranging from arson investigation to traffic control; Reserve Police Officers Training; and full-week state and national conferences such as Advanced Criminal Investigation, The National Polygraph Workshop, and the SWAT Training. National investigative teams from recent transportation disasters, as well as top crime experts, are among the individuals who provide instruction and technology.

Dental Hygiene Clinic

Location: Main Campus
F-140

Phone: 686-9469

The Dental Hygiene Clinic provides you with the opportunity for oral hygiene services. These services are provided by the Dental Hygiene students under the direct supervision of state-licensed Dental Hygienists and Dentists and include: cleaning teeth, radiographs (X-rays), oral examinations, oral cancer examinations, topical fluoride treatments, sealants, and oral hygiene instructions. Minimum fees are charged for these services to cover the cost of disposable products used during your two-hour appointment. For an appointment, phone the Clinic.



Disability Concerns - see "Multi-Cultural Services"



Distance Learning

Location: Main Campus
Lower Level-West
A-61
Web Page: <http://www.delta.edu/~telelm>

Phone: 686-9398
Toll free 1-888-663-4254

Distance Learning provides learners with an alternative way to take college credit and non-credit courses. Using telecommunications technology, students can take classes from home or at an off campus site that is closer to home. Courses from other colleges and universities are also available.

Telecourses - Video and text based college credit courses designed for the independent learner. Students are able to complete the course from home, coming on campus for orientation, review sessions, and exams.

Interactive Television (ITV) - A system that links two or more sites for simultaneous voice, video, and data exchange. Students attend class at a site nearby. Delta College courses and courses from other colleges and universities are available in this format.

Internet Delivered Courses - Course material, lectures, assignments, and class discussions are delivered online via the internet, creating a virtual classroom.

It is now possible to earn an associate's degree by taking a combination of telecourses, ITV, and Internet delivered courses. For more information about distance learning, contact the Telelearning Office.



Financial Aid

Location: Main Campus
D-101

Phone: 686-9080

If you need financial help in order to go to college, then you will want to go to the Office of Financial Aid. The goal of the financial aid programs at Delta is to eliminate the economic barriers that prevent you from meeting your educational goals. Available, if you apply and are qualified, are grants, part-time employment, scholarships, and loans. It is extremely important to apply as early as possible for financial aid, since the application process can take two to three months; aid is awarded on a first-come, first-served basis; and funds in some of the programs run out early. See Section II, The Enrollment Process, Financial Aid for application and program details.



Fire Science Technology/Academy

Location: Main Campus
N-131

Phone: 686-9020

The Fire Science Technology/Academy is jointly sponsored by Delta College, the Michigan Fire Fighters Training Council (MFFTC), and representatives of local fire departments and manufacturers who serve on the Fire Science Advisory Committee. Through this partnership, Delta College has been designated by MFFTC as a Regional Training Center. The Academy provides a variety of academic programs, including Fire Fighter I and II, Fire Officer I, II, and III, and specialized degree options. All courses develop basic and advanced skills needed to perform effectively within the fire service environment.



Food & Conference Services

Location: Main Campus
Lower Level
Commons Food Court

Phone: 686-9035

Food and Conference Services coordinates conference and meeting rooms for various College and community events and caters meals for special events for both the College and the community. Contact the Food and Conference Services Office for details.

There's no doubt about it! Studying makes you hungry, so you'll want to visit our food services. Here you can purchase snacks or full meals at our mini food court featuring Pizza Rotinis, Spud Rocks, Health Club Soup and Salad Bar, TCBY Yogurt, Sara Lee Deli Sandwich Shoppe and Delta's own Courtyard Cafe and Commons Grille and Bakery. Relax in the lounge facilities and enjoy the game room. In addition, vending machines in various locations throughout the Main Building and the Fine Arts Building offer hot and cold drinks, bottled water, candy, snacks, sandwiches, popcorn, ice cream, fruit, and entrees.



Foundation Office

Location: Main Campus
Lower Level
A-45

Phone: 686-9224

The Delta College Foundation is a nonprofit, tax-exempt educational corporation organized under Michigan law to receive gifts, bequests, and scholarships on behalf of the students, the staff, and the College. The primary purpose of the Foundation is to solicit private sector financial support to extend the broadest possible opportunities for educational benefits to the residents of Bay, Midland, and Saginaw counties.

The Foundation provides funding for student financial assistance, institutional enrichment, construction and maintenance of College buildings, purchase of instructional/teaching equipment, faculty/staff professional and personal growth activities, and innovative projects which benefit the College and community.

The scholarships provided by the Foundation include:

Bay City Central - Class of '41 Scholarship
Elzie & Muriel Beaver Scholarship Endowment
Darrell R. Berry Scholarship
Donald J. & Betty Carlyon Scholarship
Delta College Business Division Endowment
Delta College Employees' Endowment for Student Scholarships
Delta College Foundation Student Scholarship Endowment
Louis W. Doll/Patricia Drury Scholarship
Gene R. Duckworth Scholarship
Gerace Construction Scholarship Endowment
Robert M. Gohlke Memorial Scholarship
Priscilla Bogi Guritza Scholarship
Beki Gray Hadley Scholarship
Honors Scholarship Endowment & Athletic Scholarship Endowment
Walter M. & Sophie Kilar Scholarship
King's Sons & Daughters Scholarship-Saginaw County
Oscar W. Kloha Scholarship
Edith & Wallace Knepp Scholarship
Robert I. & Marjorie Knepp Scholarship
W.R. Knepp, Jr. Scholarship
Gary Laatsch Scholarship
Rhea Miller Scholarship Endowment
Morley Brothers Foundation Scholarship
Wendell R. & Ethel G. Mullison Scholarship
William H. "Buddy" Oates Scholarship
Cecilia Randall Scholarship Endowment for Work Study Students
Renee L. Rookard Scholarship
Clifford & Grace Saladine Scholarship
Ruth & Van DeWitt Simmons Scholarship
Paul Sowatsky Scholarship
Lola Bishop Whitney Scholarship
Alice & Jack Wirt Scholarship
Alma & Alton Zucker Sr. & Anton Zucker, Jr. Scholarship

Program endowments provided by the Foundation include:

Donald J. & Betty Carlyon Endowed Teaching Chair
Ormond E. Barstow & Ludo K. Frevel Award for Scholarship
Achievement Endowment
Global Education Endowment
Delta College Foundation Endowment
DeVere Sturm Family Endowment



Health Services

Location: Main Campus
N-102

Phone: 686-9333

To assist with your health needs, a registered nurse is available Mondays through Thursdays from 8 a.m. to 5 p.m. and Friday from 8 a.m. to noon. She will provide emergency first aid; direct treatment for minor injuries or illnesses; health screening, including blood pressure, T.B. skin tests, and weight; health referrals and assistance with locating medical assistance; health counseling and preventative health care materials; dispensing of over-the-counter drugs as appropriate; health insurance information and applications; and maintenance of student health records.



Hispanic Services - see "Multi-Cultural Services"



Honors Program

Location: Main Campus
J-100

Phone: 686-9091

If you are a highly-motivated learner capable of critical/creative thinking, the Honors Program is designed to meet your needs. Honors courses provide much individual attention as well as interaction with instructors and peers. You can enroll in the full Honors Program; select individual Honors sections; or receive Honors credit for non-Honors courses by arranging with instructors to complete an Honors option (extra reading or writing, a project, class presentation, etc.).

To qualify, you must meet one or more of the following criteria: graduate in the top 10-15% of your high school class; have a cumulative high school grade point average (GPA) of 3.5 or higher; have a combined score of 1100 on the SAT or a composite score of 25 on the ACT; have completed 12 college credits with a 3.2 or higher GPA; receive a strong teacher recommendation; do well on the ASSET test; or demonstrate equivalency of the above through portfolios, projects, awards, and/or an interview with the Honors Program Director.

If you are a motivated student seeking a challenging classroom environment and you can demonstrate a commitment to learning, you are likely to be admitted.



Institutional Advancement

Location: Main Campus
A-197

Phone: 686-9225

This office is in charge of the marketing, advertising, and public relations activities of Delta College. It oversees the College's public information, community relations, and alumni affairs programs. This office also coordinates all fundraising activities in the College.

Contact this office for information regarding College events.



International/Intercultural Programs

Location: Main Campus
Lower Level-West
A-57 and A-58

Phone: 686-9485

No matter where you stand on earth, international and intercultural knowledge is important. An Academic Service, International/Intercultural Programs at Delta facilitates faculty, staff, student, and community projects that foster a global perspective, respect diversity, value the environment, and develop skills necessary to work and live in an evolving world community. To that end, International/Intercultural Office is committed to creating an awareness and understanding of world issues through the following initiatives:

- curricular support and modular development
- sister college linkages
- international travel tours
- faculty and student exchanges
- membership in state and national organizations
- Peace Corps Partnerships
- outreach programs for local service organizations
- community forums
- World View Awards
- Global Awareness Week
- Earth Day
- Global Education Endowment
- Gene Duckworth Scholar in Residence Program
- International/Intercultural Resource Office

The world is what we share ... make it your classroom



Library

Location: Main Campus-South

Phone: 686-9560 Reference
686-9310 Circulation
686-9307 Audio/Visual
686-4131 FAX

The Library is available to assist you with class work, business, or personal needs. The collection consists of monographs, periodicals, and newspapers and is a partial depository of United States government documents. The collection may be accessed by the on-line card catalog (VALCAT), CD-ROM indexes, or printed indexes. Full text articles from recent issues of the New York Times and The Wall Street Journal and over 400 journals are available on compact disk (PROQUEST). PROQUEST also indexes about 1600 journals. Many other indexes and reference publications are also available on CD-ROM. If a book or periodical is not available at Delta, you may request it through inter-library loan. At least two weeks must be allowed for delivery.

The Library reference services include Library orientation, library instruction, and personal research assistance by professional librarians.

Audiovisual equipment such as slide projectors, record players, tape recorders, and video players is available for your use within the Library (see the Senate Handbook for guidelines). Audiovisual work stations are also available for individual instruction and study.



Lifelong Wellness Facilities

Location: Main Campus
N-wing

Phone: 686-9025

To add a little fun and fitness to your life, you can take advantage of our Wellness facilities. We have something for everyone. There are eight racquetball courts, two gymnasiums, a dance room, and a fitness center. Used for College classes, these facilities are also available to the public on weekends during the Fall and Winter Semesters for a fee. Phone the Health and Wellness Division Office for details.

The newest addition to the facilities is the Fitness Center, which features a Universal aerobic super circuit and a variety of other aerobic exercise equipment. Through a required orientation session, you can have an individualized workout program designed just for you and a sophisticated computer program periodically monitors your progress. When not in use for College fitness classes, this facility is available for Delta employees and students, as well as the general public for a minimal cost. Phone the Fitness Center at 686-9518 for open hours and rates.

There are also outdoor facilities available to the general public at no charge when not in use for instructional purposes, team practice, or sports events. These include tennis courts, archery targets, a soccer field, and a golf driving range and putting green.



Multi-Cultural Services

Location: Main Campus

Phone: 686-9125
D-102

Students with varied abilities and backgrounds will find support services among the many areas in Multi-Cultural Services. Staff members provide information and direct support for you in the areas of admissions, financial aid, registration, academic advising, and program completion. Support services are also available for students with disabilities to accommodate their unique needs including instructional aids, interpreters, readers, adaptive equipment and orientation. Assistance to students can be arranged for either day or evening hours both on the main campus and at the off-campus locations.

Yearly activities to inform the College and community of the unique cultural, historical and linguistic heritage of our students are sponsored including a graduate recognition. Various performers, speakers and activities, plus student clubs and organizations are sponsored for your participation - you may start a group that addresses your interests. A small library collection is available which contains unique historical and cultural material, and which also stores catalogs from various Black colleges for students interested in transferring.

Areas included in Multi-Cultural Services are:

African-American Services

Phone: 686-9121

Disability Concerns

Phone: 686-9096

Hispanic Services

Phone: 686-9125

Native American, Asian,

International

Phone: 686-9125

Student Activities

Phone: 686-9336



Multi-Media Learning Lab

Location: Main Campus
Upper Level
F-268

Phone: 686-9479

The Multimedia Learning Lab is an open lab, available to provide you with flexible, independent learning activities which support the instruction you receive in the classroom. It is made up of independent work spaces with open access (days, evenings, and weekends), and provides technical support staff, services, and materials. Preferential access is given to students in five areas: allied health; nursing; science; technical; and health, physical education and recreation.



Native-American, Asian, International - see "Multi-Cultural Services"



Off-Campus Center Services

For information, contact Instructional Services

Location: Main Campus
J-102

Phone: 686-9221

Delta College offers courses and services in approximately 30 off-Campus locations, giving you the opportunity to take many courses at sites that may be closer to your home than the main Campus. The six major Off-Campus Centers are:

First Ward Community Center
1410 N. 12th
Saginaw

Phone: 754-4443

Industry Education Center
3024 James Savage Road
Midland

Phone: 496-3368

International Centre
310 Johnson
Saginaw

Phone: 758-3402

Midland Center
1025 E. Wheeler Road
Midland

Phone: 835-2240

Planetarium and Learning Center
100 Center Avenue
Bay City

Phone: 667-2260

Ricker Annex Center
4605 Webber
Saginaw

Phone: 752-7500

Since the number of courses offered at these Centers varies, the number of services offered also varies. Some of the services offered at the five Centers listed above include computer labs, tutoring, study skills development, make-up testing, limited advising/counseling services, referral to appropriate on-Campus offices, forms and information needed for Delta processes, and food and beverage vending machines.

Check the Schedule of Academic Classes booklet for a listing of courses offered each semester at off-Campus locations.



Placement Services

Location: Main Campus
Lower Level-East
Web page: <http://www.delta.edu/~jobplace>

Phone: 686-9074

Over 1,000 people find employment annually through Placement Services. If you are looking for employment, be sure to take advantage of the services of this department.

When you want a job, the staff is there to help. Delta students, former students, and alumni, along with graduates from other Michigan public colleges and universities, may register for employment services. As positions become available, you will be matched to them by computer, notified of openings and referred to prospective employers. Many full-time and part-time jobs are available in communities surrounding Delta.

Student employment while attending Delta, on-campus as well as in a variety of jobs in the community, is also possible. If you are interested in student employment, you should inquire several months in advance of the time you anticipate beginning a job.

You can also develop effective resume writing, interviewing and job-hunting skills by taking advantage of the many resources available.



Planetarium and Learning Center

Location: 100 Center Avenue
Bay City

Phone: 667-2260

The Delta College Planetarium & Learning Center, funded with a \$8.75 million NASA grant, houses a state-of-the-art planetarium/theater complex, rooftop observatory, and eight classrooms. Also included is a large multi-purpose assembly/exhibit space, gift shop and a magnificent lobby whose floor displays most of our star constellations.

The Planetarium has a DIGISTAR II Star Projection System in a 50 ft. dome with 130 unidirectional seats allowing for audience-driven interactive programming. The computerized star projection system and integrated audio-visual special effects equipment provides unique learning opportunities for school and civic groups, the public and Delta College classes and special programs. Call the office for show times and ticket prices.



Police - see "Campus Police"



Pre-School

Location: Main Campus
Y-Building
Northeast of Main Building

Phone: 686-9334

If you have children between the ages of 2 1/2 and 6 who need quality child care, the Pre-School Center may be your answer. The Center provides a balanced schedule of daily activities based on the developmental needs of pre-school children, including intellectual stimulation, emotional stability, large motor activity, rest, and nourishment. Child care is available during the Fall and Winter Semesters, serving the children of Delta students first, and the children of faculty and staff as space permits. Contact the Pre-School Center for details and fees.



Records and Registration

Location: Main Campus
A-Wing

Phone: 686-9305

You will want to get acquainted with the services of the Records and Registration Office, because you will need to use them often during your enrollment at Delta. Some of those services include: conducting phone and on-campus registration, processing adds and drops, mailing grade reports, filling transcript requests, evaluating transcripts from other colleges for possible Delta credits, certifying for graduation, and providing diplomas, enrollment verification, and health validation applications.

For details about registration, adding courses, and dropping courses, see Section II, The Enrollment Process, Registration.

For details about grades, transcripts, and graduation, see Section IV, Academic Policies and Information.

For details regarding acceptance of transfer credit, see Section IV, Academic Policies and Information, Acceptance of Credits.



Recycling Team

Location: Main Campus
A-199

Phone: 686-9209

As a student at Delta College, you'll have the opportunity to participate in the College recycling program. Delta College is involved in the collection of computer paper, newspaper, mixed office paper, cardboard, phone books, food service materials, and polystyrene. Collection bins are conveniently located throughout the Campus. Student volunteers are welcome! A successful recycling program requires the cooperation and dedication of everyone on Campus. For an information packet listing recyclables and collection sites, stop in or phone the Office. It's our environment! Let's take care of it!



Single Parent, Displaced Homemaker, and Sex Equity Grant Programs

Location: Main Campus
D-111

Phone: 686-9390

The Single Parent, Displaced Homemaker/Sex Equity Grant is part of the Carl D. Perkins Vocational Education Act. The Grant is designed to aid students in vocational programs and is a supplement to federal financial aid.

To qualify, you must be in an approved vocational program and be a single parent, a displaced homemaker, a single pregnant woman, or a non-traditional job trainee.

The Grant covers the cost of tuition, fees, and books after Federal Pell Grant dollars have been exhausted and also pays for Community Education courses not eligible for Federal Pell Grant funds. Other costs, such as uniforms, may also be covered for qualified students.



Speaker's Bureau

Location: Main Campus
A-196

Phone: 686-9490

To assist you with programming for your club or organization, Delta College faculty and staff members are available free of charge to speak on a variety of topics in areas such as the arts, community issues, political issues, economic issues, and many more. Take advantage of this service and provide quality programming for your group.



Student Activities - See "Multi-Cultural Services"



Teaching/Learning Center (T/LC)

Location: **Main Campus**

Phone: 686-9314

Library

Midland Center

835-9340

Room 20

Ricker Center

752-7500

Room 7

Use the Teaching/Learning Center to help you reach your educational goals. Students of all skill levels find help and support at the T/LC. Services are free to all currently enrolled Delta students.

Professional staff and student tutors can help you with study skills such as test-taking and memory techniques, and with all academic content areas including mathematics, science, the social sciences, humanities, reading, and writing skills.

Peer tutoring is available three ways: walk-in, one-on-one, and through the Peer Mentor Program which provides a tutor to a class. Student tutors and mentors must meet strict qualifications and receive ongoing training.

Special services offered through the T/LC include services for learning disabled students, PLATO 2000® computer instruction, master student workshops, academic skills assessment, and electronic learning styles inventories.

Also available is a networked computer lab with word processing and academic software, Macintoshes, typewriters, VCRs, and skills videos.

Some T/LC services are also offered at the Midland Center and the Ricker Center.



Testing Center

Location: Main Campus

Lower level

F-4

The Testing Center is a centralized testing facility that provides a secure environment with flexible hours to serve students and faculty by coordinating academic out-of-class and make-up testing. By utilizing out-of-class testing, classroom instruction time is increased. Test anxiety is reduced for students by providing a quiet, peaceful environment free of classroom time constraints and underlying pressures. The testing center provides year-round, consistent access for the make-up testing needs of the college.



Tech Prep

Location: Main Campus
J-102

Phone: 686-9521

Delta College's Tech Prep Office serves as the coordination headquarters for "Transition II", the Saginaw Valley's regional Tech Prep consortium. The Consortium is a community partnership whose purpose is to develop Tech Prep programs between high schools, employers and Delta College. These programs provide opportunities for students to begin their college associate degree studies while still in high school. Financially supported by federal grant funds and Delta College, the Tech Prep Office provides Tech Prep program development consultation services and organizes Tech Prep professional development activities and seminars for educators and employers in Arenac, Bay, Midland, Saginaw, and Tuscola counties.

Anyone interested in learning more about the "Transition II" Tech Prep programs are encouraged to contact the Tech Prep Office.



Veterans' Services

Location: Main Campus
A-wing

Phone: 686-9465

If you are a veteran, you will want to be sure to visit this Office. The staff of veteran-students understands your needs and will assist you in obtaining your veterans' educational benefits. They also provide information regarding college credit for your military training/experience, loans, and helping services and/or any other entitlements allowed through the U.S. Department of Veterans Affairs. See Section II, The Enrollment Process, Veterans/Reservists Information for further details.



Volunteer Services

Location: Main Campus
D-102

Phone: 686-9336

If you want to have your own life enriched while contributing to the fulfillment of the needs of others, you'll want to take advantage of the service learning opportunities provided by the Volunteer Services Office. Volunteer Services are provided through a partnership with the Voluntary Action Centers of Bay, Midland, and Saginaw counties. You will be placed in community and College work settings which will broaden your educational and work experiences, give you on-the-job insight into a career, contribute to the betterment of the community, and build your self-confidence. It's an experience you won't want to miss.



Welcome Center

Location: Main Campus
D-wing

Phone: 686-9093

Looking for the location of an on-Campus activity? Wondering how to get to one of our Off-Campus Centers? Have some general questions about Delta? Stop in at the Welcome Center. You will receive a friendly greeting, be provided with directions and Campus maps, and find out where to go for what. You will be able to obtain an overview of our wide variety of program offerings, events, and workshops, and learn more about College services. Generally, all information about Delta College that you, as a visitor or prospective student, might want or need is available at the Welcome Center. In addition, they are happy to provide Campus tours.

Clubs and Organizations

Look over the following clubs and organizations that are available for your participation and see if there is something that appeals to you. If there isn't, but you would like to start a group that addresses your interests, you can do that too. For information about our current clubs and organizations or to start a new one, contact the Office of the Vice President of Student Services located in A-119 in the Main Building.

Black Student Union Organization

This organization promotes and fosters a support system in which service projects and activities will be established. Also to promote cultural awareness, networking, and effective communications.



Collegiate

The Delta Collegiate is our award-winning student newspaper, which is published weekly during the Fall and Winter Semesters. It is distributed free in the College Commons and other locations throughout the College.



Computer Users Group

This organization provides students and faculty the opportunity to learn more about computer software and to explore issues as they relate to their own PC needs. This is done through vendor demonstrations, shows and conventions, magazines, and the sharing of information.



Delta Epsilon Chi (DECA)

DECA is a national business association for college students with career objectives in marketing, merchandising, and/or management. The purpose of DECA is to enhance the value of education in these areas which will contribute to occupational competence and promote understanding and appreciation for the responsibilities of citizenship in our free enterprise system.



International Student Organization

The International Student Organization was founded to meet the social and cultural needs of international students at Delta. Emphasis is on supporting the international students while giving American students the opportunity to experience other cultures and countries.



Inter-Varsity Christian Fellowship

The Inter-Varsity Christian Fellowship provides a place for the encouragement and challenge of Christian fellowship and Bible study.



Judo Club

The Judo Club promotes both the art and sport of Kudokan Judo through studying Judo and participating in competitions.



LaRaza

This organization promotes the Hispanic culture and innovative and creative means to exhibit mutual respect for all cultures. Its members are committed to higher education and community service for all Hispanic students in the community and each member bears a special and continuing responsibility to reinforce and reflect those values that will support and encourage younger students in the community.

Legal Assistant Association

This Association serves as a communication link between Legal Assistant students, alumni, and faculty outside the classroom, providing students with an opportunity to network with other legal professionals and helping to develop high standards and credibility for the Legal Assistant Program and the paralegal profession.



Phi Theta Kappa International Honor Society

Phi Theta Kappa is the largest honor society for two-year colleges. It promotes scholarship, leadership, service, and fellowship among its members as well as for the College and the community.



Pom Pon/Cheerleading

Members of this organization will participate in exhibition cheering and Pom pon activities at home basketball games.



Respiratory Care Association

This Association promotes the profession of respiratory care and the increased awareness of pulmonary health care.



Running and Rowing Club

This Club was established to promote the sports of running and rowing for student wellness.



Science and Technology Organization

This Organization is designed to explore science and technology and to investigate science careers.



USS Solar Wind

Members of this group share with others the enjoyment of Star Trek and further the knowledge of science fiction.



THE ACADEMIC COURSE DESCRIPTIONS

1998 - 1999

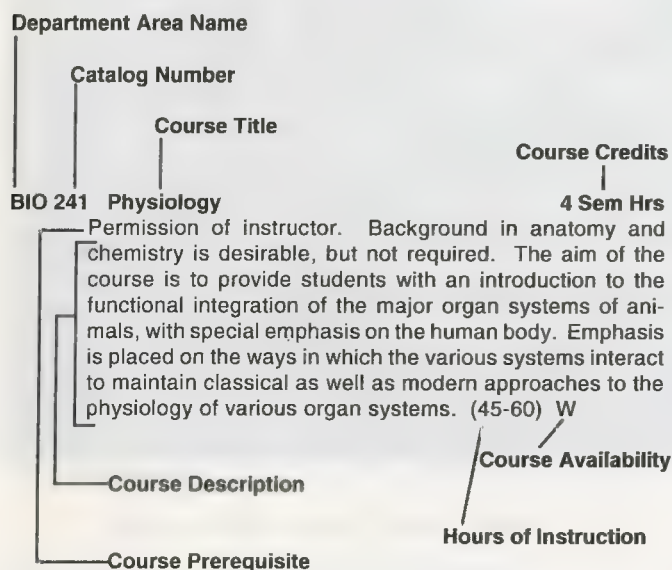
1. Academic Course Information
2. Academic Course Abbreviations
3. Academic Course Descriptions



Academic Course Information

Courses listed in this section are those which Delta College is approved to offer; however, inclusion of a course does not obligate the College to offer the course in any particular semester or year. Most of the courses listed will be offered at least once during a complete academic year. A schedule of courses is published in March for the Spring/Summer Semester, in early April for the Fall Semester, and by early November for the Winter Semester. **Courses in this section, as well as in the Schedule of Academic Classes booklet published each semester, are listed in alphabetical order by subject area name according to three-digit course numbers.**

An Example



Course Credits

1. Each course is assigned a number of credits which generally indicates the number of hours per week the course meets. Courses with labs and occupational courses, however, generally meet more hours than the number of credits they carry.
2. Tuition rates are assessed on a per-credit-hour basis, and vary depending on your residency classification. Total tuition for each course must be paid at registration time.

Course Prerequisites

1. Requirements which must be met or courses which must be taken before enrolling in a specific course are listed as a Prerequisite at the beginning of each course description.
2. Courses not having a prerequisite stated may be taken by any student.

Course Descriptions

1. Below each course number and title, a brief course description is provided. You should read this description carefully to be sure you are qualified to take the course and that the course content meets your needs and interests. If you need additional information, you may contact the Chair of the Division which offers the course or the course instructor.
2. Instructors often give supplemental course information (i.e., course outline, syllabus, tasks and competencies, etc.), during the first week of classes, so students will know specific course procedures, grading criteria, and course objectives. Circumstances such as illness, inclement weather, class composition and size, or the introduction of timely material may necessitate some adjustments. The College recognizes the right of the faculty member to exercise professional judgment in making such adjustments.

Hours of Instruction

The numbers given within parentheses at the end of each course description indicate the total number of hours each course will be scheduled within a semester. The first number specifies total lecture hours and the second number specifies total laboratory or clinical hours for the course. Skilled Trades courses, however, only have one number (clock hours), since lecture and laboratory hours have been combined.

Course Availability

For courses that are offered only one semester each year, the letter code at the very end of the course descriptions designate the semester in which the course is usually offered.

F Fall Semester	O Occasionally or On Demand
W Winter Semester	if sufficient enrollment develops
S Spring/Summer Semester	

Course Numbering System

All Delta College academic courses have a three-digit course number. The Schedule of Academic Classes booklet, which is published prior to each semester, lists courses in alphabetical order by subject area name according to these three-digit course numbers.

1. Courses within the 100-199 series generally represent freshman-level courses; however, these courses may also be taken by sophomores.
2. Courses within the 200-289 series are intended primarily for sophomores; however, these courses may be taken by freshmen having the necessary prerequisites.
3. Courses within the 290-299 series designate special courses as follows: 291 Independent Study (arranged on an individual basis between student and faculty member; see Independent Study Course Information, page 113); 292-299 Special Topics/Seminars (such courses will be offered as regular courses upon demand or to meet the special needs of some programs).

Honors Course Sections

Honors courses will incorporate all regular course content with added emphasis on individual learning styles, the process of learning, and the creation of products. You will be involved in problem-solving, analyzing, synthesizing, and evaluating at a higher level of abstraction. You will be expected to be more self-directed with a goal of understanding the theoretical base of the subject matter. If you enroll in honors courses, you will receive an "H" for that course on your transcript.

Independent Study Course Information

Independent Study refers to enrollment in an appropriately-designated, variable-credit course for a specific plan of study, authorized and supervised by a consenting faculty member. Independent Study is not a substitute for regular courses, but an enrichment opportunity. Normally, it is a project designated to allow you to investigate an area of interest not within the scope of a regular course, to probe more in depth than is possible in a regular course, or to obtain an educational experience outside that normally offered by a regular course.

Guidelines for an Independent Study course are:

1. **Proposals:** The Independent Study project is normally student-initiated. Early interaction with faculty is essential in the development of a mutually-acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contacts, and a statement of the evaluative criteria to be used by the faculty member.
2. **Approval Process:** The faculty member must accept and approve the project and then submit the agreed-upon proposal on the appropriate form to the Department Chair for approval. The granting of approval by the Department Chair may involve considerations, such as faculty workload, which go beyond the merits of the project. If the Chair approves, information copies of the form are then submitted to the Academic Dean and the Director of Records and Registration. The student may register for the project after the authorization form is received by the Director of Records and Registration.
3. **Responsibility:** Independent Study is basically a tutorial process, necessarily involving substantial faculty participation. Students are on their own when pursuing an Independent Study, because it involves no class meetings or formal lectures. The faculty member is the responsible custodian of the project, obliged to provide guidance, assistance, criticism, suggestion, and evaluation.
4. **Variable Credit:** With faculty approval, credit may vary from one to six credits.

International Travel/Study Courses

Delta College offers international travel/study courses on an annual basis. These courses are usually offered for four credits which include a combination of lecture and field experience in group international travel; however, since the length of travel time may vary from one to four weeks, the Academic Council has approved variable credit, depending on the length of the travel field experience. Consequently, travel/study courses may vary in credits from a minimum of one to a maximum of four. These courses are numbered 268 and may be taken in various disciplines; i.e., BIO 268, ECN 268, SOC 268. The specific country/region of focus will be listed after the course number and title (SOC 268 International Studies: Australia). You may register for only one travel/study course per trip. You should consult a counselor regarding the transferability of total credits earned through international study and travel.

Delta College reserves the right to alter, add, or delete course numbers, titles, credit hours, lecture and/or lab hours, and descriptions before expiration of this publication.

Non-degree credit courses offered by Community Services (Section III, Programs of Study, Non-Degree Programs and Activities) are described in their Community Services Schedule of Classes, which is published prior to the beginning of each semester.

Learning Community Courses

Learning community courses are courses in which:

1. Disciplines are taught together (for example, literature with history, calculus with physics, criminal justice with psychology) so that the connections between them are clear.
2. You can work with other students on activities and projects.
3. You can interact with other students and teachers and be part of a closely-knit, supportive community of learners.
4. You may experience a variety of learning modes such as participating in large and small group discussions, working on activities and projects, taking field trips, and hearing lectures.
5. Students and teachers work closely together, contributing what they already know and seeking new knowledge.
6. You get to express your thoughts and ideas and to hear those of your fellow students.
7. You can gain self-confidence about yourself as a student, a thinker, a reader, a writer, a speaker, a listener.

These courses usually combine two different disciplines or areas in order to show the connections between them. They are taught by at least two instructors, each from the different disciplines or areas included in the course.

Each semester, Delta College publishes a complete list of learning community courses in the Schedule of Academic Classes booklet.

Distance Learning Courses

In addition to traditional teaching methods, Delta College offers telecourses, Interactive Television Courses, and Internet Delivered Courses. By taking advantage of the new technologies available to educators, it is now possible to earn college credit at home or at a site closer to where you live or work.

Telecourses are meant for the independent learner. They consist of a textbook, study guide, video tapes, and are guided by a faculty member. You have access to the instructor by phone, the internet, or in person, to discuss questions when they arise. You need only to come on campus for an orientation session and the exam/review sessions. If you are a veteran or on financial aid, you should check with your counselor prior to enrolling in a telecourse.

Interactive television courses are very similar to traditional courses because all students attend class at the same time each week. Using the latest in telecommunication technologies, Delta can offer the same class at four different locations at the same time, all taught by the same instructor. All sites can see and hear the other sites simultaneously over television monitors. You attend the site most convenient to you.

Internet delivered courses are also meant for the independent learner who needs a flexible schedule. You can "attend" class when it's convenient for you. The syllabus along with links to assignments, are available on the web and classroom discussion takes place via e-mail and a listserv. You only have to come on campus for an orientation session and exams.

Going the Distance degree program is a project between Delta and CMU where the delivery of the degree programs are entirely through distance learning. These learning experiences shall include Learning Packages, Independent Study, Telecourses, Online courses and other appropriate forms of distance delivery.

The Michigan Community College Virtual Learning Network (MCCVLN) is a collaboration between Michigan community colleges that allows Delta students to take distance learning courses from other community colleges in Michigan. If a specific class is needed and Delta doesn't offer it, check out the course database on the web at <<http://mcca.org/mcca/vln>>. Check also with your counselor to make sure the credit will transfer back to Delta as the course you need.

Each semester, Delta College publishes a complete list of distance learning offerings in the Academic Class Schedule booklet.

Academic Course Abbreviations

Courses in this section, as well as those in the Schedule of Academic Classes booklet published each semester, are listed in alphabetical order by department areas.

The subject area abbreviation appears on students' grade reports and official transcripts.

Abbreviation	Department Area	Page
ABS	Applied Behavioral Studies	115
ACC	Accounting	115
AFT	Aviation Flight Technology	116
AGM	Auto Service Education Program (ASEP)	116
AGR	Agricultural Enterprise	117
AIB	American Institute of Banking	118
ARC	Architectural Technology	119
ART	Art	120
AST	Astronomy	122
AUT	Automotive Service	122
BIO	Biology	124
BRT	Broadcasting and Telecommunication	125
CAD	Computer Assisted Drafting	127
CD	Child Development	127
CED	Cooperative Education	128
CHM	Chemistry	128
CIS	Computer Information Systems	129
CJ	Criminal Justice	131
CNC	Computer Numerical Control	132
CPI	Chemical Process Industries	136
CPS	Computer Science	136
CRM	Credit Union Management	136
CT	Chemical Technology	136
DA	Dental Assisting	137
DH	Dental Hygiene	137
DRF	Drafting	139
ECN	Economics	139
ED	Education	140
EET	Electronic Engineering Technology	140
EGR	Engineering	141
EMT	Emergency Medical Technician	141
ENG	English	142
ENV	Environmental Science	143
FM	Fashion Merchandising	143
FR	French	144
FST	Fire Science Technology	144
GAT	Graphic Arts Technology	146
GB	General Business	147
GE	German	149
GEO	Geography	149
GLG	Geology	150
HIS	History	151
HSC	Health Science	152
HSR	Human Services	152
ID	Interior Design	152

Abbreviation	Department Area	Page
IHU	Interdisciplinary Humanities	153
SCI	Interdisciplinary Science	176
IS	Industrial Supervision	154
LAS	Legal Assistant	154
LIB	Library Science	155
LIT	Literature	155
LW	Lifelong Wellness Activity	156
LWT	Lifelong Wellness Theory	158
MA	Medical Assistant	159
MDA	Mechanical Design Automation	159
MFG	Manufacturing	160
MS	Machine Tool Operations	160
MT	Mechanical Technology	160
MTH	Mathematics	161
MUS	Music	163
NHA	Nursing Assistant/Home Health Aide	164
NT	Nursing Transition	165
NUR	Nursing (RN)	164
OSE	Office Systems Education	166
PHL	Philosophy	168
PHO	Photography	168
PHY	Physics	169
PNE	Practical Nursing Education	170
POL	Political Science	169
PSC	Physical Science	170
PSY	Psychology	170
PTA	Physical Therapist Assistant	171
QA	Quality Assurance	171
RAD	Radiography	172
RC	Residential Construction	173
RE	Real Estate	174
RHA	Refrigeration/Heating & Air Conditioning	174
ROB	Robotics	175
RT	Respiratory Care	175
RUS	Russian	176
SCI	Interdisciplinary Science	176
SFA	Surgical First Assistant	176
SK--	Skilled Trades	180
SL	Sign Language	177
SOC	Sociology	177
SPA	Spanish	178
SPH	Speech	179
ST	Surgical Technology	179
TA	Teacher Assistant	186
WET	Water Environment Technology	187
WELD	Welding	187

An Employer's Opinion

"Delta College's Child Development program has a great reputation which is why we call Delta's Placement an opening for child care staff and teacher assistants. We have been very pleased with the Delta students we have hired."

Rebecca Anlas • Kinder Kare • Freeland

Academic Courses

APPLIED BEHAVIORAL STUDIES COURSES

ABS 097 Student Success Strategies

4 Sem Hrs

Develops knowledge of strategies in using information about: 1) study skills such as notetaking, test preparation and test taking, effective textbook reading and review, memory, presentation and writing-to-learn strategies, and critical thinking; 2) Life skills such as self-assessment of strengths and weaknesses, learning style, health, time management, stress management, relationships, self-esteem, responsibility, and goal setting; 3) Delta resources such as the library and electronic indexes, and Teaching/Learning Center. Aids in understanding the transition to the expectations of academic culture. Does not earn credit toward graduation. Recommended for students whose assessment scores indicate skills in ENG 100, ENG 108 or ENG 109 range. Credit may be earned in only one of the following: ABS 097 or ABS 098, 099, and 100. (60-0)

ABS 102 The Job Hunt

1 Sem Hr

Develops skills in locating leads in the job market, writing resumes, cover letters, completing applications and interviewing. (15-0)

ABS 103 Career Decision Making

1 Sem Hr

A group seminar to help students discover and actualize their unique capabilities, strengths, talents, and abilities. The seminar will enable each student to learn about the variables that are important in making an occupational decision. (15-0)

ABS 104 Behavior Change I

1 Sem Hr

A seminar class based on theories of social behavior analyzing the thoughts, ideas and assumptions that are part of the American socialization process. Students are introduced to the symbolic interactionist theories of James, Mead, Cooley, Goffman and others and how these theories explain the development of the social self. (15-0)

ABS 105 Behavior Change II

1 Sem Hr

Prerequisite: ABS 104. A continuation of the study of the social self and the process of socialization as the development of a belief system through exploration of other social behavioral theorists (e.g., Glasser, Ellis, Perls, Mead, Benedict, Merton, Thomas). The focus is on how one's socialization can positively or negatively effect the results one experiences by their "self fulfilling prophecies" and their "definition of the situation." (15-0) FW

ABS 108 Becoming a Master Student

2 Sem Hrs

Assists students in obtaining skills critical to their college success. Demonstrates and practices strategies in test taking, note taking, memory, textbook reading, and critical and creative thinking. Explores life skills related to college success, such as personal responsibility; relationship building; health, money, time and stress management; and college resources. Students enrolled in or needing ENG 100, ENG 107, or ENG 108 are recommended to take ABS 100. Credit may be earned in only one of the following: ABS 100, ABS 101, ABS 108 or ABS 292. (30-0)

ABS 108A Becoming A Master Student/Plus Practice

3 Sem Hrs
Combines the goals of ABS 108 with additional time for individual attention to student needs in using study and life skills practice. Recommended for students who want or need additional practice and instructor feedback or who are coming back to school after an extended absence and whose assessment scores indicate skills in ENG 111A range. Credit may be earned in only one of the following: ABS 101, ABS 108 or ABS 108A or ABS 292. (45-0)

ABS 292 Becoming a Master Student/Expanded Practice

3 Sem Hrs
Students enrolled in or needing ENG 100, ENG 107, or ENG 108 are recommended to take ABS 292. Combines the goals of ABS 108 with additional time for special attention to individual student needs in study and life skills practice. Credit may be earned in only one of the following: ABS 100, ABS 101, ABS 108 or ABS 292. (30-30)

ABS 290-299 Special Projects in Applied Behavioral Science

0

ACCOUNTING COURSES

ACC 111 Introductory Accounting

4 Sem Hrs

Basic accounting practices and procedures, including journalizing, posting, preparation of financial statements, special journals, subsidiary ledgers, petty cash fund, bank reconciliation, and payroll accounting. Completion of a practice set is required. Transfer students should take ACC 211. Credit may only be earned in either ACC 111 or in 211 but not in both. (60-0)

ACC 115 Applied Tax - H&R Block

5 Sem Hrs

A practical course dealing with mastery of current tax law. Students apply their knowledge by constant completion of federal and state forms relating to such topics as deductions, credits, self-employment, farms, rentals, pensions and capital gains. H&R Block issues a Certificate of Accomplishment to students who average grades of 70% or more in the course. (75-0) FW

ACC 211 Principles of Accounting I

4 Sem Hrs

Prerequisite: MTH 107 or equivalent or concurrent enrollment. Introduces basic concepts of accounting principles. Includes the accounting cycle for service and merchandising businesses, internal control, accounting for current assets, long-term assets, current liabilities, and owner's equity. Completion of a practice set required. Credit may only be earned in ACC 111 or 211 but not both. (60-15)

ACC 212 Principles of Accounting II

4 Sem Hrs

Prerequisite: ACC 211 with a C (2.0) minimum grade. Includes a study of corporation basic theory and methodology, statement of cash flows, accounting for manufacturing operations, and accounting data as used in performance measurement, decision making, planning, and control. (60-15)

ACC 214 Microcomputer Accounting Applications

4 Sem Hrs

Prerequisite: CIS 133 and ACC 111 or ACC 211. An introduction to microcomputer applications in general ledger, accounts receivable, accounts payable, payroll, and inventory/invoicing. Electronic spreadsheet applications will be developed using appropriate software. Outside laboratory assignments will be given. (60-0) FW

ACC 215 Federal Tax Accounting

3 Sem Hrs

Prerequisite: ACC 212. Studies the Federal income tax law. Emphasis is placed on the application to the individual and the single proprietorship business, although some references are made to the corporation. Individual tax returns are prepared both manually and by computer. (45-0) FW

ACC 223 Accounting Practices/Working Capital

4 Sem Hrs

Prerequisite: ACC 212 and ACC 214 with grades of C (2.0) or better. Discusses current assets and current liabilities. Includes journalizing, in-depth study of cash and internal control, receivables, current liabilities, error analysis, statement analysis, payroll taxes, and sales tax. Completion of three major projects is required. (60-0) F

ACC 224 Accounting Practices/Long-Term

4 Sem Hrs

Prerequisite: ACC 212 and ACC 214 with grades of C(2.0) or better. Discusses longterm assets and equities. Includes journalizing, plant assets, depreciation, notes, stockholders' equity, time value of money, error analysis, statement analysis, and statement of cash flows. Completion of three major projects is required. (60-0) W

ACC 227 Intermediate Accounting I

4 Sem Hrs

Prerequisite: ACC 212 with a C (2.0) minimum grade. Accounting processes, theory, and principles. Financial statement presentation, valuation of current assets, property plant and equipment, current liabilities and time value of money. Designed for Northwood University 3+1 students. (60-0) F Odd years only.

ACC 228 Intermediate Accounting II

4 Sem Hrs

Prerequisite: ACC 212 with a C (2.0) minimum grade. Equity accounting including stockholders equity, EPS, income taxes, pensions, leases, accounting changes, revenue recognition, investments, financial statement analysis, long-term liabilities and statement of cash flows. Designed for Northwood University 3+1 students. (60-0) W Even years only.

ACC 233 Cost Accounting**3 Sem Hrs**

Prerequisite: ACC 212 with a C (2.0) minimum grade. Relates principles and methods of handling materials, labor costs, and manufacturing expenses to the formulation of reports to management. Includes job order, process, standard, direct and budgetary costing procedures. (45-0) FW

ACC 235 Financial Management**3 Sem Hrs**

Prerequisite: ACC 212 with a C (2.0) minimum.. An introduction to the basic concepts of financial management. Includes goals and functions of financial management, financial forecasting, leverage, working capital management, time value of money, stock and bond valuation, cost of capital, capital budgeting, and concept of risk. (45-0) FW

ACC 290-299 Special Projects in Accounting O**AVIATION FLIGHT TECHNOLOGY COURSES****AFT 101 Private Pilot Ground Training****4 Sem Hrs**

Provides the basic principles of flight that are of concern to the private pilot with special emphasis on preparation to pass the Federal Aviation Administration (FAA) Private Pilot written exam. Includes Preflight facts, FAA regulations, meteorology, flight computer, navigation and radio navigation. (60-0) F

AFT 105 Primary Pilot Flight Training I**2 Sem Hrs**

Prerequisite: Completion of or concurrent enrollment in AFT 101 and coordinator permission. Provides knowledge, skills and habit patterns for solo flight. Includes practice of airport operations, takeoffs and landings, and emergency procedures with work towards maximum performance standards. Emphasizes radio navigation and advanced ground reference maneuvers directed towards private pilot skill level. Special fees for flight instruction and aircraft rental must be paid by students. (0-50)

AFT 106 Primary Pilot Flight Training II**3 Sem Hrs**

Prerequisite: AFT 105 with a "C" (2.0) minimum grade and coordinator permission. Provides information, knowledge, and skills so student may safely conduct solo - cross-country operations. Develops Pilot Proficiency in preparation for Private Pilot Practical Test. Special fees must be paid by student for flight instructor time and aircraft rental. (20-25).

AFT 201 Instrument Pilot Ground Training**4 Sem Hrs**

Prerequisite: AFT 101 or equivalent and coordinator permission. Prepares students for Federal Aviation Administration Instrument-Rating-Airplane written examination leading to the addition of an instrument rating to a Private or Commercial Pilot certificate. Emphasizes airplane instruments, air traffic control, Federal Aviation regulations, instrument flight operations, en route and approach charts and IFR trip planning and navigation. (60-0) W

AFT 202 Aviation Meteorology**1 Sem Hr**

Prerequisite: GEO 103 with a "C" grade (2.0) minimum. Focuses on use of aviation weather services, electronic retrieval of weather related information and the National Weather Service Program. Emphasizes flight planning and the use of surface weather reports, radar reports, aviation forecasts, surface analyses, constant pressure charts and upper winds information. (15-0)

AFT 210 Commercial Pilot Ground Training**4 Sem Hrs**

Prerequisites: AFT 101 with a "C" (2.0) grade minimum or equivalent and coordinator permission. Prepares students for the Federal Aviation Administration Commercial Pilot written examination leading to licensure of a commercial pilot by the Federal Aviation Administration. Covers applicable flight information publication, meteorology and weather, navigation, aerodynamics and principles of flight, and aircraft instruments. (60-0)

AFT 215 Advanced Pilot Flight Training I**2 Sem Hrs**

Prerequisite: AFT 106 with a "C" (2.0) minimum grade, previous or concurrent enrollment in AFT 201 and coordinator permission. Provides student with foundation in attitude instrument flight and instrument navigation. Prepares student for introduction of Instrument Flight Rules (IFR) en route procedures by performing instrument approaches and holding patterns. Special fees for flight instructor and aircraft rental will be paid by student. (30-26)

AFT 216 Advanced Pilot Flight Training II**3 Sem Hrs**

Prerequisite: AFT 215 with a "C" (2.0) minimum grade and coordinator permission. Provides instruction in Instrument Flight Rules (IFR) en route procedures to attain proficiency level of Instrument Rated Pilot. Provides the student who meets the flight time requirements of FAR (Federal Aviation Regulation 61.65) the qualifications to apply for F.A.A. Instrument Rating Practical Test. Special fees for flight instructor and aircraft rental will be paid by student. (25-20)

AFT 217 Advanced Pilot Flight Training III**2 Sem Hrs**

Prerequisite: AFT 106 with a "C" (2.0) minimum grade and coordinator permission. Includes extensive review and practice in Visual. Flight Rules (VFR) cross-country procedures. Develops night orientation, night cross-country procedures, complex airplane operations and precision flight maneuvers to Commercial Pilot standards. Special fees for flight instructor and aircraft rental will be paid by student. (35-34)

AFT 218 Advanced Pilot Flight Training IV**3 Sem Hrs**

Prerequisite: AFT 217 with a "C" (2.0) minimum grade and coordinator permission. Provides extensive review and preparation for Federal Aviation Administration Commercial Practical Test. Emphasizes both the Instrument and Commercial Flight Test Oral Preparation Briefings. Special fees for flight instructor and aircraft rental must be paid by student. (25-25)

AFT 290-299 Special Projects in Aviation O**AUTO SERVICE EDUCATION PROGRAM (ASEP) COURSES****AGM 122 Chassis Service****12 Sem Hrs**

Introduces the operation, maintenance, and service of GM base brakes, steering and suspension. General auto lab equipment operation and stresses safety. Introduces electrical theory and reinforces basic charge-start systems. (96-180)

AGM 123 Chassis Dealership Work Experience**1 Sem Hrs**

Prerequisite: Successful completion of AGM 122. Provides work experience in the operation, maintenance, and service of GM base brakes, steering and suspension. Stresses general auto lab equipment operation and safety. Introduces electrical theory and reinforces basic charge-start systems. (0-400)

AGM 124 Engine and Emission Control Service**12 Sem Hrs**

Introduces the operation, maintenance, and service of GM engines for mechanical and performance. Stresses spark, fuel, and emission control systems as well as the tooling necessary to interrogate these systems. (96-180)

AGM 125 Engine Dealership Work Experience**1 Sem Hrs**

Prerequisite: Successful completion of AGM 124. Provides work experience in the operation, maintenance, and service of GM engines for mechanical and performance. Stresses basic spark, fuel, and emission control systems. Introduces the tooling necessary to interrogate these systems. (0-400)

AGM 160 Minor Vehicle Service**2 Sem Hrs**

An Introduction to the components and operating principles of the automobile. Emphasis is placed upon job orientation, safe work habits, and the opportunity to learn accurate and accepted methods in the performance of minor services. (10-30)

AGM 162 Engine Service**5 Sem Hrs**

Prerequisite: GM Dealership sponsor or GM Apprentice. Emphasizes engine servicing, necessary for engine repair and maintenance. Includes the design, construction, and operation of gasoline and diesel engines. Credit may be earned in AGM 162 or SKGM 162 but not both. (35-105) F

AGM 167 Air Conditioning**2 Sem Hrs**

Prerequisite: AGM 183. Studies nomenclature, theory of operation, system diagnosis, and methods of service with emphasis on use of tools and equipment necessary to determine malfunctions, service components, and place unit back in service. (21-21) S

AGM 170 Dealership Work Experience I**1 Sem Hr**

Prerequisite: GM Dealership sponsor and AGM 160, 162. A 400 hour internship emphasizing skills derived through on-the-job experience at the sponsoring dealership. (0-400)

AGM 183 Specialized Electronics Training**4 Sem Hrs**

Provides the beginning technician with skills necessary for competent electrical fault isolation, system diagnosis, and repair. Credit may be earned in AGM 183 or SKGM 183 but not both. (60-12) F

AGM 187 Electronic Engine Controls/Driveability**9 Sem Hrs**

Prerequisites: AGM 162/SKGM 162. Studies complete emission systems, fuel delivery functions, fuel injection, electronic ignition systems, engine tuneup and drivability. Emphasizes computerized engine control, and the use of accurate and complete methods in the diagnosis of engine performance complaints. Credit may be earned in AGM 187 or SKGM 187 but not both. (60-180) W

AGM 190 Dealership Work Experience II**1 Sem Hr**

Prerequisite: GM Dealership sponsor and AGM 170. A 360 hour internship emphasizing skill derived through on-the-job experiences with the sponsoring dealership. (0-360)

AGM 222 Drivetrain Service**12 Sem Hrs**

Introduces the operation, maintenance, and service of GM manual and automatic power transmission devices and stresses final drive and propshaft. (96-180)

AGM 223 Drivetrain Work Experience**1 Sem Hr**

Prerequisite: Successful completion of AGM 222. Provides work experience in the operation, maintenance, and service of GM manual and automatic power transmission devices and stresses final drive and propshaft. (0-400)

AGM 224 Electrical/Electronics/Air Conditioning Service**12 Sem Hrs**

Stresses the operation, maintenance, and service of GM electrical and electronics systems. Introduces heating & air conditioning systems and controls. (96-180)

AGM 225 Electrical/Electronics/Air Conditioning Work Experience**1 Sem Hr**

Prerequisite: Successful completion of AGM 224. Provides work experience in the operation, maintenance, and service of GM electrical and electronics systems, stressing heating & air conditioning systems and controls. (0-400)

AGM 260 Suspension Systems**5 Sem Hrs**

Prerequisites: GM Dealership Sponsor and AGM 162 or SKGM 162. Studies the nomenclature and operating principles of steering and suspension systems. Includes wheel alignment geometry, adjustment methods, and operation of alignment equipment with emphasis placed on methods of adjustment and repair necessary for quality steering and suspension service. Credit may be earned in AGM 260 or SKGM 260 but not both. (32-112) F

AGM 265 Applied Body Electrical**2 Sem Hrs**

Prerequisite: AGM 183. Studies Automotive Electronics as it pertains to Automotive Accessory circuits. Emphasizes diagnosis of malfunctions within electrical and convenience circuits with emphasis on using Strategy Based Diagnostics. (24-24) F

AGM 270 Dealership Work Experience III**1 Sem Hr**

Prerequisite: AGM 190 or 170. A 400 hour internship emphasizing skills derived through on-the-job experiences with the sponsoring dealership. (0-400)

AGM 272 Automatic/Electronic Transmissions**8 Sem Hrs**

Prerequisites: AGM 162 or SKGM 162. Studies the functional service skills for automatic transmissions and transaxles including nomenclature, fundamentals of operation, and diagnosis of malfunctions and electronic controls. Emphasizes use of special tools and equipment necessary in diagnosis and repair. Credit may be earned in AGM 272 or SKGM 272 but not both. (64-144) W

AGM 280 Dealership Work Experience IV**1 Sem Hr**

Prerequisite: AGM 270 or 190. A 600 hour internship emphasizing skills derived through on-the-job experiences with the sponsoring dealership. (0-600)

AGM 284 Brake Systems**4 Sem Hrs**

Prerequisites: AGM 160 & 162 or SKGM 160 & SKGM 162. Studies service methods by understanding the nomenclature and operating principles of the hydraulic and mechanical systems of shoe and disc brake assemblies. Includes Anti-lock Brake, and Traction Control Systems with emphasis on repair procedures on brake system components necessary for quality and safe brake system servicing. Credit may be earned in AGM 284 or SKGM 284 but not in both. (25-75) S

AGM 286 Drivelines and Manual Transmissions**3 Sem Hrs**

Prerequisites: AGM 162 or SKGM 162. Studies nomenclature, fundamentals of operation, and diagnosis of malfunctions with emphasis on service operations of clutches, standard transmissions, standard transaxles, drive shafts, drive axles, and differentials. Credit may be earned in AGM 286 or SKGM 286 but not both. (15-45) S

AGM 287 Customer Service Advising**2 Sem Hrs**

Prerequisite: GM Dealership sponsor and AGM 160, 162. Studies the arrangement, managerial structure, and operational characteristics of the service floor of an automotive service facility. Includes the opportunity to learn the basic concepts necessary for success as a professional service advisor through units of instruction oriented towards customer interviewing, service merchandising, warranty interpretation, and repair service scheduling. (30-0) F

AGM 288 Dealership Work Experience V**1 Sem Hr**

Prerequisite: AGM 280 or 270. A 400 hour internship emphasizing skills derived through on-the-job experiences with the sponsoring dealership. (0-400)

AGRICULTURAL ENTERPRISE COURSES**AGR 140 Farm Business Management****2 Sem Hrs**

Basic principles of planning and management of land, labor, crops, livestock, equipment and buildings to insure a successful farming business. (30-0)

AGR 150 Agricultural Computer I**2 Sem Hrs**

Provides the farm record keeper of agribusiness manager a familiarity with the use of a personal computer for business operations. Emphasis is on developing basic skills on the MS-DOS system. A firm accounting package and several other farm programs are covered. (30-0) WS

AGR 151 Agricultural Computing II**2 Sem Hrs**

Prerequisite: AGR 150 or PC Familiarity. Provides the farm record keeper or agribusiness manager skill in the use of a personal computer for business decisions. Applications are extended to the use of a spreadsheet, data filer, and farm record keeping. Programs specific to class needs are emphasized. (30-0) WS

AGR 160 Agribusiness Management**3 Sem Hrs**

Provides a working knowledge of the agribusiness system including input supplies, production agriculture, marketing and processing. Intended for agribusiness professionals providing service to the production (farming) sector of agriculture. (30-0)

AGR 185 Plant Science I 2 Sem Hrs
Students will develop a working knowledge of plant growth through the study of basic concepts and terminology unique to plants. Using lecture and greenhouse laboratory experiences, plant reproduction, growth factors, cell structure and classifications will be explored. (20-15) O

AGR 186 Plant Science II 2 Sem Hrs
Prerequisite: AGR 185 or permission of instructor. Students will develop a working knowledge of plant functions through the study of basic concepts and terminology unique to plants. Using lecture and greenhouse laboratory experiences, genetics, translocation, photosynthesis, respiration and symbiosis will be explored. (20-15) O

AGR 187 Plant Science III 2 Sem Hrs
Prerequisite: AGR 186 or permission of instructor. Students will develop a working knowledge of plant management through the study of basic concepts and terminology unique to plants. Using lecture and greenhouse laboratory experiences, nutrient requirements, plant pests, soil tilth, and pest management will be explored. (20-15) O

AGR 190 Equine Management 2 Sem Hrs
Introductory course in the basic principles of horse care and management. Topics include selecting a horse, tack, breeds, nutrition, handling, equipment, grooming, care, safety, illnesses, first aid, showing, riding techniques, breeding and facility construction. Satisfies needs of prospective horse owners, the recreational rider or those interested in a career in equine science/management. Credit may be earned in AGR 190 or LWT190 but not in both. Fee required. (30-0) O

AGR 205 Agricultural Marketing I: Domestic & Global 3 Sem Hrs
A study of marketing agricultural commodities. Covers bankers' view points, hedging, world markets, Michigan markets, niche marketing, weather and the role it plays, and other marketing alternatives. Course concludes with a trip to Chicago Board of Trade to watch the market work first hand. (45-0) WE

AGR 206 Agricultural Marketing II: Domestic and Global 3 Sem Hrs
Prerequisite: AGR 205. More in-depth study of commodities marketing. Helps plan strategies and alternatives to the common marketing practices. Emphasis on national policies and foreign country agricultural economies. Optional trip to USDA, Washington, D.C. (45-0) WE

AGR 208 Futures Market/Technical Analysis 1 Sem Hr
Prerequisite: AGR 205 or instructor's permission. The study of market action using mathematical and chart displays for the purpose of forecasting price trends. Includes chart interpretation, moving averages, and computer programs in evaluation of futures market direction. (16-0) WE

AGR 210 Agricultural Finance 3 Sem Hrs
Provides the farmer or agribusiness manager the basic finance and accounting knowledge to operate a farm business. Teaches participants know how to put together information needed to obtain financing and keep records to accurately assess their financial status. Explains how implications of expansion of the farm business and other areas will directly or indirectly affect the financial statement. (30-0)

AGR 215 Agribusiness Law 2 Sem Hrs
Prepares farmers and agribusiness owners for better dealing with the legal aspects of interactions with banks, other agribusinesses, lawyers, the courts, and the government. Topics covered are wills and estates, lending, liens, bankruptcy and restructuring, farm worker laws, contracts and transactions, and an introduction to the court system. (30-0)

AGR 218 Agriculture & the Environment 2 Sem Hrs
The laws and regulations pertaining to environmental issues in agriculture are interpreted for farmers and agribusiness leaders. Technical information is provided on pesticide effects in the environment and water quality. Legal defenses for farmers are discussed, as are improved cultural practices, and health and safety tips. Experts from the DNR and the MDA will provide opinions. (30-0) O

AGR 220 Fundamentals of Soil Science 2 Sem Hrs
Emphasizes physical and chemical properties of soil, soil formation and classification, and survey of essential plant nutrients and their availability in soils. Both theoretical and practical aspects of soil fertility are studied. Farmers and nurserymen can relate topics of soil testing/interpretation and uses of appropriate types and amount of fertilizer to maximize long-term soil productivity. (30-0) O

AGR 221 Soil Science 2 Sem Hrs
Prerequisite: CHM 101 or 111. Physical and chemical properties of soil, soil formation and classification, and survey of essential plant nutrients and their availability in soils. Both theoretical and practical aspects of soil fertility are studied. Special project required. (30-0) O

AGR 232 The Dry Bean & Sugar Beet Industries 1 Sem Hr
Issues affecting the dry bean and sugar beet industries are presented in lectures and debated by experts. Field trips are used to observe the food marketing system from grower to grocery. (15-0) O

AGR 240 Woody Plant Identification I 3 Sem Hrs
Identification, culture and uses of important native and introduced trees, both shade and ornamental, found in Michigan. Familiarity of common problems associated with the plants and awareness of recommended cultivars are included. Field trips to local nurseries and parks provide living plant observation. (30-30) FE

AGR 241 Woody Plant Identification II 3 Sem Hrs
Prerequisite: AGR 240. Identification, culture and used of important native and introduced shrubs and vines found in Michigan. Familiarity of common problems associated with the plants and awareness of recommended cultivars are included. Field trips to local nurseries and parks provide living plant observation. (30-30) WE

AGR 243 Tree Maintenance 3 Sem Hrs
Prerequisite: AGR 241. A comprehensive understanding of plant functions as well as cultural and horticultural practices as they relate to trees. Common tree insect and disease pests, along with physiological problems are addressed. (30-30) FE

AGR 290-299 Special Projects in Agricultural Enterprise O

AMERICAN INSTITUTE OF BANKING COURSES

AIB 100 Introduction Commercial Lending 2 Sem Hrs
Focus on the commercial lending process and the skills loan officers need to service corporate clients. Course content will include the loan application process from application to collection, resolving loan problems, regulatory forces and legal structures that affect commercial lending, and developing a bank's commercial loan portfolio. (30-0) O

AIB 106 AIB Analyzing Financial Statements 2 Sem Hrs
Prerequisite: AIB 103. Designed specifically for students in the American Institute of Banking program. The course offers the student tools and techniques necessary for the evaluation of financial condition and operating performance of a modern business enterprise. The course is divided into four parts: Financial Statement Analysis and Accounting; Financial Statements and Business Funds Flow; Tools of Financial Statement Analysis; and The Technique of Financial Statement Analysis. The last part is subdivided into five modules, covering short-term liquidity and solvency, funds flow analysis, analysis of operations, long-term financial strength, and asset utilization. Credit will not be granted to students who have earned credit in ACC 212. (30-0) O

AIB 115 Fundamentals of Analyzing Financial Statements 1 Sem Hr
Prerequisites: Basic Accounting or instructor permission. Financial statement analysis will be studied by conducting trend, ratio and comparative statement analysis, evaluating pro formas and cash budgets, as well as analyzing a workout situation by using several types of commercial loans. (15-0) O

AIB 117 Understanding & Selling Bank Products 2 Sem Hrs
Six human relations skills that encourage smooth, clear and personal communication between the bank and the customer will be identified and practiced, as well as the basic steps in selling the variety of bank products available and how to describe the bank's products and services in a customer-focused framework. (30-0) O

AIB 118 Mortgage Loan Documentation 2 Sem Hrs
Develops the elements essential to the successful origination, processing and basic underwriting of various types of residential mortgages. Includes primary documentation required in handling conventional loans insured by the FHA, and loans guaranteed by the Department of Veterans Affairs. (30-0) O

AIB 124 AIB Law and Banking: Principles 3 Sem Hrs
Provides banker's guide to law and legal issues with special emphasis on the Uniform Commercial Code and the identification of sources and applications of banking law. Studies torts and crimes, contracts, real and personal properties, bankruptcy and the Bankruptcy Code, as well as the legal implications of consumer lending within the context of the banking industry. Credit may be earned in either AIB 124 or GB 251 but not both. (45-0)

AIB 160 Principles of Banking 3 Sem Hrs
Presents an overview of full-service commercial banking in America. Introduces organizational structure, major functions, products and services, and the major departments of banks as well as demand and time deposits, negotiable instruments, bank loans and investments. Discusses banking in a competitive, regulated, and increasingly global economy. (45-0)

AIB 166 Money and Banking 3 Sem Hrs
Provides a working knowledge of the various integral parts of the American Banking System. The impact of the Federal Reserve System and current economic factors on interest rates, yields, price levels, and the growth of money supply are presented in detail. Basic monetary theory needed by banking employees is emphasized in this course designed to meet the needs of the American Institute of Banking program. (45-0) FE

AIB 173 Consumer Lending 3 Sem Hrs
Prerequisite: AIB 160. Designed for persons following the Finance and Banking Program. This course presents the techniques of bank installment lending. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan, and collecting the amounts due. Other topics presented are inventing financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. (45-0) F

AIB 185 Customer Service for Bank Personnel 1 Sem Hr
Develops better communication skills to enable employees to relate more effectively with customers and other bank personnel. Presents effective ways of establishing customer contact, exploring needs and defining and resolving problems. (15-0) O

AIB 290-299 Special Projects in American Institute of Banking O

ARC 105 Architectural Drafting I 4 Sem Hrs
Fundamentals of architectural drafting including linework emphasis, lettering design, symbol applications, multiview projections relative to architectural drawings, one point perspective, two point perspective, graphic design elements, and presentation of floor plans, sections and elevations. Study of space requirements and method of representing basic residential elements. Introduction of CAD including demonstrations and basic procedures. Credit may be earned in ARC 105 or RC 109 but not in both. (45-45) FD

ARC 106 Architectural Drafting II 4 Sem Hrs
Prerequisite: ARC 105 or permission of instructor. Introduction to construction drawing organization. Development of coordinated drawings for one small building with emphasis on application of notes, dimensions, and development of graphic skills. Includes a study of CAD techniques and the use of the computer for drawing production, storage and retrieval, development of selected architectural details relating to foundation, floor, wall, and roof assemblies, with emphasis on energy conservation. (45-45) W

ARC 111 Mechanical and Electrical Systems for Buildings 3 Sem Hrs
Fundamentals and operating principles of air conditioning, plumbing, and electrical systems; including typical layout, calculations, sizing, and methods of installation. Credit may be earned in ARC 111 or RC 206 but not in both. (45-0) WD

ARC 114 Architectural AutoCAD 2D Basics 2 Sem Hrs
Prerequisites: Previous drafting experience or course work with instructor permission; ARC 105 prior to or concurrently. Introduces 2D AutoCAD drawing, including: Basic drawing and editing commands applied to new and existing architectural drawings, basic drawing prototype setup, DOS and windows operation procedures, saving drawings to hard disks and floppy disks, printing drawings to laser printers and pen plotters, completion of floor plan, section, and elevation drawings. Introduces add on architectural software for generating automatic architectural elements for inclusion into architectural drawings. Credit may be earned in ARC 114 or CAD 114 but not in both. (30-0)

ARC 140 Introduction to Landscape Architecture 3 Sem Hrs
Designed to acquaint students with principles, techniques, process and materials used in landscape architecture technology. Covers planting and residential design, terminology, cost estimates, construction methods and use of plant. (45-0) O

ARC 200 Spatial Analysis and Presentation 3 Sem Hrs
Emphasis will be placed on the reading of "blueprints" from the viewpoint of the interior designer. The student will analyze and plan appropriate spatial arrangement given intended use, relationship to adjacent space and accepted standards; do basic drawing and presentations and present drawings of floor spans, interior elevations, and interior perspectives. Credit may be earned in ARC 200 or ID 200 but not in both. (45-0) WD

ARC 204 Estimating Building Construction 3 Sem Hrs
Principles of calculating quantities of material and costs of material and labor of building construction. Use of data base, word processing, and spreadsheet software and BASIC programming techniques to calculate and record estimate records. Reference to specifications, drawings, contracts, and the procedures used to arrive at building estimates. Methods of cost control during construction. Credit may be earned in ARC 204 or RC 202 but not in both. (45-0) WD

ARC 205 Architectural Drafting III 3 Sem Hrs
Prerequisite: ARC 106. Development of construction documents for a non-residential building. Introduction to concrete. Masonry, and steel construction with their various detailing requirements, symbolisms, and characteristics utilized in installation of mechanical and electrical systems. Includes a study of computer-aided design examples. (0-90) F

ARC 206 Architectural Drafting IV 3 Sem Hrs
Prerequisite: ARC 205. Development of sketches into preliminary and construction drawings. Use of CAD for design and drafting examples and production. Continued design and drafting of concrete, masonry, and steel construction. Integration of structural, mechanical, electrical, and solar strategies into commercial buildings. (0-90) W

ARCHITECTURAL TECHNOLOGY COURSES

ARC 101 Materials and Methods of Construction 3 Sem Hrs
Introduction to basic construction materials; properties, recommended use, space requirements, methods of finishing, building code implications, and energy conservation applications. Credit may be earned in ARC 101 or RC 102 but not in both. (45-0) FD

ARC 207 Architectural Presentation Drawing 3 Sem Hrs
Prerequisite: ARC 105 or permission of instructor. Advanced development of graphic skills intended to advance abilities in freehand drawing, perspective, composition, and the use of water color and marker in architectural presentation drawing. (0-90) WD

ARC 211 Elements of Structural Design 3 Sem Hrs
Review of basic mechanics. Analysis of live and dead loads on simple structural members. Use and limitations of wood, steel and concrete handbooks in structural design. Use of structural calculations with microcomputers and calculators in solving basic structural problems. (45-0) FD

ARC 212 Theory and Practice of Structural Steel Design 4 Sem Hrs
Prerequisite: ARC 211 or permission of instructor. A detailed study and practice of methods used in structural steel design, drafting, and fabrication. Includes load and stress analysis, structural framing and connection design, and drafting techniques used in the development of shop drawings. (45-30) O

ARC 214 Architectural AutoCad 3D Basics 3 Sem Hrs
Prerequisites: ARC 114, CAD 114, or a working knowledge of AutoCAD and permission of the instructor. Introduces 3d AutoCAD drawing, including: Conversion of 2D drawings to 3D, user coordinate system (UCS) manipulation, line extrusion, 3D faces, dynamic viewing, paper space viewing and printing, shading, hiding, simplified methods of architectural presentation. Continues study of 2D techniques with application to 3D objects. Introduces add on software for generating automatic architectural elements (currently KETIV brand software is used) including: doors, windows, stairs, roofs, cross sections, and predawn architectural icons (cars, plants, people, furniture, etc.) (45-0)

ARC 221 Site Preparation 3 Sem Hrs
Fundamentals of site analysis including a study of utility services, metes and bounds, solar access and restrictions. Elements of surveying including use of instruments, leveling, measurement of angles and distances, contours, location of site elements and development of a site plan from field data. Interpretation of engineering surveys. Introduction to landscape design. Includes a study of computer aided design examples. Credit may be earned in ARC 221 or RC 105 but not in both. (45-0) FD

ARC 231 Concrete Fundamentals 3 Sem Hrs
A detailed study of the history, manufacture, characteristics and types of cement. Selection and design of concrete mixtures; sampling and testing plastic concrete; placing, finishing, and curing of concrete. Concreting during hot and cold weather. (45-0) O

ARC 254 Earth Sheltered Housing Design 4 Sem Hrs
Emphasis is placed on selecting appropriate materials for use below the Earth's surface. Various plan and section arrangements are explored and compared. Discussion of codes, zoning, energy efficiency, solar exposure, and human comfort will allow the student to discover the appropriate design requirements for building a dwelling with berm and earth covering. Examples of computer use in energy related performance studies will be illustrated. (60-0) O

ARC 290-299 Special Projects in Architectural Technology O

ART 105 Art Experience 3 Sem Hrs
Designed for students not majoring in Art to provide an enriching experience to two- and three-dimensional media: to include drawing, painting, graphic media, clay and other sculptural media. It is designed primarily for the general degree student who wishes to have some art experience. There will also be an emphasis on art appreciation. (15-45) FW

ART 111 Drawing I 3 Sem Hrs
A beginning course in drawing designed for all students interested in the fundamentals of visual form and analysis of structure. Representational treatment of objects, forms, and volumes in line, value, and texture with a variety of media. (0-90) FW

ART 112 Drawing II 3 Sem Hrs
Prerequisite: ART 111. A continuation of ART 111 emphasizing composition and further understanding of the elements of drawing in relation to individual expression. Problems involve a variety of media. (0-90) W

ART 113 Art Education I 3 Sem Hrs
Introduction to art for prospective teachers. Develops the ability to stimulate the creative interests of children in art. Acquaints the student with a variety of methods and materials adjusted to various grade levels. (0-90) FW

ART 114 Art Education II 3 Sem Hrs
Prerequisite: ART 113. A continuation of ART 113. Additional investigation of the theories of art education and creative growth of children. (0-90) O

ART 115 Basic Design -- Two Dimensional 3 Sem Hrs
Experimentation with the basic elements of design: line, form, space, value, textures, and color. A variety of media is used in developing a visual vocabulary and understanding of art elements and composition. (0-90) FW

ART 116 Basic Design -- Three Dimensional 3 Sem Hrs
A series of problems designed to explore the elements of design in spatial compositions using a variety of basic materials. (0-90) FW

ART 151 Art History and Appreciation I 3 Sem Hrs
Required of all first-year art majors. A survey of Western art from Prehistoric times to the Renaissance. Deals with major works and artists of the Prehistoric, Ancient, Classical and Medieval cultures. The emphasis is on the architecture and sculpture of these periods. (45-0) FW

ART 152 Art History and Appreciation II 3 Sem Hrs
Required of all first-year art majors. A continuation of ART 151. A survey of the history of Western art from the Renaissance through Baroque, neo-classicism, Romanticism, Impressionism, Expressionism and various modern schools. The emphasis is on the painting of those periods. (45-0) FW

ART 154 The Arts of Africa and the Afro-American 1 Sem Hr
A study of the visual arts of Africa and the African American. Topics are: (1) the visual arts as they developed in Africa, (2) the influence of African art on the art of Europe and America, (3) the arts of contemporary Afro-America. (15-0) O

ART 156 The Collections of the Art Institute of Chicago 1 Sem Hr
Prerequisite: Permission of the instructor. An investigation of the world of art at the Art Institute of Chicago. Study will focus on the painting and sculpture in the major collections. Field work in the Art Institute of Chicago will be required. Student must pay own expenses. (15-5) O

ART 160 The Business of Art 3 Sem Hrs
Designed to acquaint the professional artist or advanced hobbyist with current business realities of art. Topics included are: self-promotion and marketing, grants, gallery contracts, networks, professional aspects, self-evaluation, career goal setting, tax and legal considerations. Journal and visits to galleries required. (45-0) O

ART 210 Figure Drawing 3 Sem Hrs
Prerequisite: ART 111. A study of the aspects of life drawing such as gesture, mass, proportions, and structure. Essentially for the art major. (0-90) O

ART COURSES

ART 100A Elements of Color Photography 3 Sem Hrs
Introduces technical operations of 35mm cameras in the color medium. Improves quality and design of photographs and develops aesthetic awareness and visual literacy. Credit may be earned in ART 100A or PHO 100A but not in both. (45-0)

- ART 217 Painting I** **3 Sem Hrs**
Prerequisites: ART 111, 115. Experimentation in acrylic media. Techniques, composition, and color are explored in relation to object references, landscape, figure and nonobjective work. (0-90) FW
- ART 218 Painting II** **3 Sem Hrs**
Prerequisite: ART 217. A continuation of the painting experience on a more advanced level. Major emphasis on developing a more personal painting style and an understanding of the artist's role in the arts today. (0-90) O
- ART 219 Watercolors** **3 Sem Hrs**
Students will explore traditional and non-traditional approaches to the watercolor medium as well as representational and abstract imagery. Work will be developed in the studio and out of doors. (0-90)
- ART 221 Graphic Design/Commercial Art** **3 Sem Hrs**
Recommended prerequisite: ART 115. Provides basic experience in graphic design. The focus will be on designing with typography as well as developing an understanding of its history and vocabulary. Aesthetics as applied to the printed page, concept development and design methodology will be addressed in assignments. Studio and lecture. (0-90) W
- ART 222 Sculpture** **3 Sem Hrs**
Prerequisite: ART 115 or 116 or permission of instructor. An introduction to a variety of sculptural concepts and techniques utilizing a variety of media. (0-90) O
- ART 231 Ceramics I** **3 Sem Hrs**
Introductory study of clay, glazes, and their applications, and techniques of wheel and hand construction through the process of low temperature Raku firing. Course fee required. (0-90) FW
- ART 232 Ceramics II** **3 Sem Hrs**
Prerequisite: ART 231 or permission of instructor. Ceramics II uses high-fire stoneware clay bodies and introduces firing techniques with high fire glazes. The techniques learned in Ceramics I are employed and are expanded to create a variety of well developed utilitarian and sculptural forms. Course fee required. (0-90) FW
- ART 233 Ceramics III** **3 Sem Hrs**
Prerequisite: ART 232 or permission of instructor. Learning by experimentation: mix own clay bodies and glazes rather than using prepared materials. Develop an understanding of ceramic process and employ this knowledge to gain a much higher level of achievement in ceramics. Course fee required. (0-90) FW
- ART 251 History of Architecture** **2 Sem Hrs**
The historical development of architecture as a major art form. This development is viewed in relation to man's knowledge of building techniques and available materials as affected by geographic, economic, political and religious influences. Formerly ART 153. (30-0) W
- ART 252 History of American Architecture** **2 Sem Hrs**
A study of the emergence and development of contemporary architecture from mid-18th century until the present, with an emphasis on the architecture of the United States. (30-0) O
- ART 255 Art of the 20th Century** **3 Sem Hrs**
An exploration of the visual arts of our century, with an emphasis on the current arts in America. (45-0) O
- ART 258 History of American Art** **3 Sem Hrs**
A study of the emergence and development of the visual arts in America from the 18th century until the present, with emphasis on the Art of painting. The works of the Hudson River School, the Luminist Movement, the Expatriates, the Eight and the Ashcan School through the Abstract Expressionists of the 50's, the pop artists of the 60's and the post-modern movements of the 70's will be examined. (45-0) O
- ART 259 History of Photography** **3 Sem Hrs**
Historical study of the evolution of technical processes and artistic concerns of the photographic media, and their impact on 20th Century society. (45-0) O
- ART 260 The Business of Art** **3 Sem Hrs**
Designed to acquaint the professional artist or advanced hobbyist with current business realities of art. Topics included are: self-promotion and marketing, grants, gallery contracts, networks, professional aspects, self-evaluation, career goal setting, tax and legal considerations. Journal, visits to galleries required. (45-0) O
- ART 270 Photography for Artists** **3 Sem Hrs**
Prerequisite: Permission of the instructor. Designed primarily for art students to acquaint them with photography in "relationship to their needs. The camera is studied as a practical resource/inspiration for mixed media, and its uses as sketchbook, tool for documentation. (36-45) W
- ART 271 Digital Imaging: Photo-Shop** **3 Sem Hrs**
ART 115 or PHO 101 recommended. Presents technical aspects/ skills of Adobe-Macintosh software with an arts emphasis toward developing aesthetic awareness. Explores photo manipulation, retouching, multiple layering, combining images with text, black and white and color images, scanning techniques, CD-ROM and other methods of storage and output. (45-0)O
- ART 271B Photoshop II** **3 Sem Hrs**
Prerequisite: ART 271. Continues to explore photographic manipulation using advanced methods of computer imaging with the "Photoshop" software program. Explores advanced scanning techniques, separation methods for prepress applications, CD ROM as resource and storage of photographic images, video and digital capture devices, service bureaus and output devices, channels, masking, and layer manipulation. Emphasizes aesthetic awareness in the art of image making. (45-0)
- ART 273 Pagemaker** **3 Sem Hrs**
Prerequisite: GAT 110, OSE 170, GAT 112 or concurrently. Advances student from creating pages conventionally on a light table into computer-generated page make-up. Begins with MacIntosh basics, concentrates on building skills using Aldus PageMaker, and ends with an introduction to QuarkXPress software. Credit may be earned in ART 2723 or GAT 222 but not both. (45-0)
- ART 274 Fractal Painter** **3 Sem Hrs**
Studies drawing and painting using the electronic canvas to create new images by scanning previous art works, textures, and photographs. Emphasizes the techniques of using the software program, and stresses the elements of art and design. Credit may be earned in ART 274 or ART 130 but not both. (45-0)
- ART 275 Computer Graphics** **3 Sem Hrs**
Prerequisites: ART 271 or GAT 226. Builds on previous Macintosh computer software and application skills to solve specific design problems. Uses combinations of several application software programs (drawing, painting, three - dimension) to achieve multiple effects with type and images on/for the printed page. Credit may be earned in ART 275 or GAT 230 but not in both. (45-0)
- ART 276 QuarkXPress** **3 Sem Hrs**
Prerequisite: GAT 222 or ART 273. Advances student from creating computer-generated pages in Pagemaker to QuarkXPress. Introduces the major differences between the two, highlights QuarkXPress, and how it relates to the printing industry today. Continues to build high-level skills using QuarkXPress' QuarkEd training guides. Credit may be earned in GAT 224 or in ART 276 but not in both. (45-0)
- ART 277 Illustrator** **3 Sem Hrs**
Prerequisite: GAT 224 or ART 276. Presents the use of Illustrator software including design and technical aspects, and the relationship to other graphic applications in the printing industry. Credit may be earned in GAT 226 or in ART 227 but not in both. (45-0)
- ART 278 Electronic Pre-Press** **3 Sem Hrs**
Prerequisites: GAT 222, GAT 224, GAT 226, GAT 230 or ART 273, ART 276, ART 277, GAT 230. Covers all aspects of preparing computer design work for the printer from start to finish. Credit may be earned in GAT 231 or in ART 278 but not in both. (45-0)

ART 280 Printmaking 3 Sem Hrs
Prerequisite: ART 111 and 115. A study of the art of printmaking and its major techniques; with studio practice in a variety of printing methods. The techniques taught are basically art skills useful to artists. (0-90) O

ART 289 Advanced Studio Projects 3 Sem Hrs
Prerequisite: Designed for advanced students who have completed all course work in their discipline. Emphasizes group collaboration in a studio environment across several art disciplines. Focuses on the added-value elements that result from interaction in a community of advanced artists sharing views, perspectives, on differing media. Requires completion of individually agreed-to project and participation in planning and arranging/ staging a group exhibition. (45-0) O

ART 290-299 Special Projects in Art O

See also Photography courses

ASTRONOMY COURSES

AST 111 Intro Astronomy 3 Sem Hrs
Familiarizes the student with the origin, characteristics, and evolution of the solar system, the stars, the galaxies, and the universe. Emphasizes the way in which our understanding of the universe has changed. Credit may be earned in AST 111 or PHY 100 but not both. (45-0)

AST 111L Astronomical Investigation 1 Sem Hr
Prerequisite: AST 111 or concurrent enrollment. Includes experimental design to investigate such events as the night sky, planetary motion, and astronomical laws. Explores use of telescopes and spectroscopes in establishing the relationship among planets in the solar system, star distances, and stellar life cycles. (0-30)

AST 290-299 Special Projects in Astronomy O

AUTOMOTIVE SERVICE COURSES

AUT 100 Introduction to Automotive Service 3 Sem Hrs
Units of instruction will emphasize orientation to the Automotive Service Units facility, basic tools and equipment, service publications, safety practices and professionalism. An introduction to the automobile and its components will concentrate on terminology and general component operation. (30-25)

AUT 101 Understanding Your Automobile 2 Sem Hrs
Intended to help you keep your car, van, or light truck in good operating condition. Topics include: the owner's manual, regular maintenance, emergency repairs, buying a new/used vehicle, or parts, selecting a repair facility, recognizing trouble signals, driving techniques, and the Michigan law for consumers and repair facilities. Not for auto majors. (30-0) FW

AUT 108 Introductory Automotive Electronics 3 Sem Hrs
Studies automotive electrical and electronic fundamentals, magnetism, and electrical test equipment, terminology, operation, and diagnosis. Develops skills in establishing an electrical base for advanced electrical/ electronic courses and in controlled learning experiences with basic electricity and electronics using meters and test equipment. (35-25)FW

AUT 110 Automotive Electronics I 4 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies electrical test equipment, battery, wiring diagram, starting and charging system terminology, operation, and diagnosis. Develops skills in diagnosis of battery, diagnosis and repair of starting and charging systems and application of wiring diagrams. (40-40)FW

AUT 112 Engine Service 6 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies automotive gasoline engines, terminology, operation, and diagnosis. Develops skills in controlled learning experiences on laboratory engine assemblies. (45-75)FW

AUT 114 Brake System Service 5 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies drum, disc, hydraulic, power assist, antilock terminology, operation, and diagnosis. Develops skills on drum, disc, hydraulic, power assist, and antilock brake systems. (40-60)FW

AUT 114B Disc Brake Systems 1.5 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies disc brake system terminology, operation and diagnosis. Develops skills in the front and rear wheel disc brake systems and lathe use. (12-18)O

AUT 114C Hydraulic/Power Assist 1 Sem Hr
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies hydraulic and power assisted brake terminology, operation, and diagnosis. Develops skills in the Pascal's Law, master cylinders, brake lines/hoses, electrical circuitry, valving and bleeding techniques for the hydraulics area. Skill development will also occur on vacuum, hydraulic, and electric power assisted units. (8-12)O

AUT 114D Anti-Lock Brakes 1 Sem Hr
Prerequisites: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies anti-lock brake terminology, operation, and diagnosis. Develops skills in car and light truck systems. A review will occur on electronics basics and use of electrical and hydraulic equipment to service these systems. (8-12)O

AUT 120 Driveline Service 6 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck clutch, manual transmission, driveshaft, differential, transaxle, front driving axle, and transfer case terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of clutches, manual transmissions, drive shafts, differentials, transaxles, front driving axles, and transfer cases. (60-60) FD

AUT 120A Clutch Service .8 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck clutch terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment and replacement of clutch system components. (8-7)O

AUT 120B Manual Transmission/Transaxle Service 1.5 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck manual transmission/transaxle terminology, operation, and diagnosis. Develops skills in the diagnosis, disassembly, inspection, replacement of parts, and reassembly of manual transmissions and transaxles. (15-15)O

AUT 120C Rear Axle/Differential Service 2 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck rear axle terminology, operation, and diagnosis. Develops skills in the diagnosis, disassembly, inspection, replacement of parts, set up, and reassembly of rear axles/differentials. (20-20)O

AUT 120D Front Wheel & Four Wheel Drive Service 1.7 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies cruise control terminology, operation, and diagnosis. Develops skills in the Ford, GM, Chrysler cruise control systems and wiring diagram application. (6-6)O

AUT 122 Automatic Transmission Service 8 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck automatic transmission terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of passenger car and light truck rear wheel drive and front wheel drive automatic transmissions. (80-100)FW

AUT 210 Automotive Electronics II 3 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies body wiring diagrams, vacuum circuit diagrams, operation and location of electrical and vacuum devices. Develops skills in the diagnosis of malfunctions within accessory and convenience circuits. (30-30) WD

AUT 210A Airbags/Steering Columns .6 Sem Hrs

Prerequisites: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies air bag and steering column terminology, operation, and diagnosis. Develops skills in the introduction to air bag systems, safety in handling, and steering column service. (6-6)O

AUT 210B Power Door Locks And Windows .6 Sem Hrs

Prerequisites: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies power door locks, window terminology, operation, and diagnosis. Develops skills in the wiring diagram use to service power door lock and window systems. (6-6)O

AUT 210C Instruments/Lighting .6 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies dash instruments and exterior lighting terminology, operation, and diagnosis. Develops skills in the instrument panel circuit operation, wiring diagram application, and headlight, taillight, turn signal, and stop lamps. (6-6)O

AUT 210D Cruise Control .6 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies cruise control terminology, operation, and diagnosis. Develops skills in the Ford, GM, Chrysler cruise control systems and wiring diagram application. (6-6)O

AUT 210E Wiper Systems .6 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies windshield wiper system terminology, operation, and diagnosis. Develops skills in the wiring diagram application on Ford, GM, and Chrysler systems and service. (6-6)O

AUT 212 Suspension System Service 7 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Units of instruction will emphasize nomenclature, operation diagnosis of the steering and suspension system. Skill development is established through controlled learning experiences with frame, unibody, steering, suspension, four-wheel drives and four-wheel alignment. (56-84) WD

AUT 212A Frame, Linkage, and Manual Gears 2 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies frame/unibody, linkage, manual gear terminology, operation, and diagnosis. Develops skills in the vehicle frame and unibody basics, steering linkage part servicing, recirculating ball, and rack and pinion manual steering gear service. (16-24)O

AUT 212B Suspension Systems and Alignment 4 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies suspension systems and alignment terminology, operation, and diagnosis. Develops skills in the servicing of all component parts of current suspension systems plus two and four wheel alignment methods using the latest equipment available. (32-48)O

AUT 212C Power Gears/Electronics 1 Sem Hr

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies frame, steering, and suspension system terminology, operation, and diagnosis. Develops skills in frame, unibody, steering, suspension, four wheel drive and four wheel alignment. (56-84)O

AUT 214 Heating/Air Conditioning Service 5 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck heating and air conditioning terminology, operation and diagnosis. Develops skills in diagnosis and repair of the heating and air conditioning system components. (50-50)FW

AUT 214A Automotive Heating and Cooling System Service 2 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger and light truck heating system and engine cooling system terminology, operation, and diagnosis. Develops skills in the diagnosis and repair of heating system components and engine cooling system components. (15-15)O

AUT 214B Automotive Air Conditioning Service 3 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck air conditioning system terminology, operation, and diagnosis. Develops skills in the diagnosis and repair of air conditioning components and use of environmentally safe equipment. (35-35)O

AUT 220 Electronic Systems Service 2 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies and reviews the fundamentals of electricity and magnetism, terminology, operation, and diagnosis. Develops skills in electronics followed by exploring the various strategies of electronic engine control. (16-24)FW

AUT 222 Fuel System Service 6 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies units of instruction necessary to develop a thorough understanding of induction systems, carburetion, and injection systems. Develops skills through controlled learning experiences with fuel delivery systems, carburetion, and fuel injection systems. (58-72)FW

AUT 222A Carburetor and Throttle Body Service 1 Sem Hr

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies carburetor and throttle body fuel injection unit repair terminology, operation, and diagnosis. Develops skill in the disassembly-inspection-component testing, reassembly and adjustments to the units. (10-10)O

AUT 222B Carburetor Fuel System Service 1 Sem Hr

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies carburetor fuel supply service terminology, operation, and diagnosis. Develops skills in all major components, their adjustments and correct operation in supplying the carburetor with fuel. (10-15)O

AUT 222C Fuel Injection Supply Service 1.5 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies fuel injection supply service terminology, operation, and diagnosis. Develops skills in all major components and their correct operation in supplying throttle body and port injection with fuel including electronic controls. (14-16)O

AUT 222D Carburetor Fuel Delivery Service 1 Sem Hr

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies carburetor fuel delivery terminology, operation, and diagnosis. Develops skills in the electronic control service, on carburetor adjustments and repair. (10-15)O

AUT 222E TBI/PFI Fuel Delivery Service 1.5 Sem Hr

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies throttle body and port fuel injection service, terminology, operation, and diagnosis. Develops skills in the electronic control service and repair, component service and adjustment. (14-16)O

AUT 224 Engine Performance Service 6 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies units of instruction necessary for a thorough understanding of ignition systems, emission control systems, and driveability diagnosis. Develops skills through controlled learning experiences with ignition systems, emission control systems, and driveability diagnosis. (50-80)FW

AUT 224A Ignition Principles 1.5 Sem Hrs

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies theory of how ignition is accomplished, terminology, operation, and diagnosis. Develops skills in the distributor and distributorless ignition operation principles. (16-13)O

AUT 224B Engine Performance Test Equipment 1.5 Sem Hrs
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies operation of common engine performance test equipment, terminology, operation, and diagnosis. Develops skills in using the oscilloscope, lab scope, 4 gas analyzer, D.M.M., vacuum gauge, scanner. (16-13)O

AUT 224C Chrysler Engine Performance Service 1 Sem Hr
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies Chrysler product engine performance service, terminology, operation, and diagnosis. Develops skills in the ignition system, computer, fuel system, and engine performance/driveability service. (6-18)O

AUT 224D General Motors Engine Performance Service 1 Sem Hr
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies G.M. product engine performance service, terminology, operation, and diagnosis. Develops skills in the ignition system, computer, fuel system, and engine performance/driveability service. (6-18)O

AUT 224E Ford Engine Performance Service 1 Sem Hr
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies Ford product engine performance service, terminology, operation, and diagnosis. Develops skills in the ignition system, computer, fuel system, and engine performance/driveability service. (6-18)O

AUT 260 Automotive Service Skills 1 Sem Hr
Prerequisite: Any two automotive clusters and faculty approval. This course is designed to provide skill building time through experiences gained by servicing customer vehicles at an automotive service facility. Service department communications, safety, diagnostic methods, and repair procedures will be emphasized. Since the intended experience is off campus, initiated and scheduled by the student, credit for this course will be normally processed through Credit-By-Portfolio. (0-120)O

BIOLOGY COURSES

BIO 101 Introduction to Anatomy and Physiology 4 Sem Hrs
An introduction to basic human anatomy and physiology taught in a lecture-demonstration format. Includes basic principles of the structures and functions of the human body and the terminology related to these topics. (60-0)

BIO 102 Microbiology & Infection Control 2 Sem Hrs
Introduces the principles of infection control in the health area professions and the basic microbiological concepts as they apply to the infection control model. Includes topics such as the nature of infectious agents, reservoirs of infection, portals of entry and exit, means of transmission, and mechanisms by which disease transmission and infection can be prevented. (30-0)

BIO 110 Environmental Science 4 Sem Hrs
Surveys the broad field of environmental science using local, regional, and global examples. Includes the following major topics: the scientific method, an introduction to chemistry, ecological principles, types of pollutants, energy principles, population issues, the environmental impact of human choices, and the role of economics, risk perception, and political choices in environmental decision-making. Exposes students to a variety of field, survey, and laboratory techniques useful in assessing environmental quality. (45-30)

BIO 111 Principles of Biology 4 Sem Hrs
An introduction to the fundamental concepts underlying biology. Major topics include basic chemistry of the cell, cell structure and metabolism, molecular biology, genetics, the origin and evolution of living things, and ecological principles. The role of biology in our present world is the unifying theme for the course. Not appropriate for biology majors; applicable as science credit for non-majors. (45-45)

BIO 113 Trees and Shrubs of Michigan 1 Sem Hr
Identification of the Michigan trees and shrubs indigenous to the Saginaw Valley. Methods used in this field course include use of the leaf, bark, twig, flower and silhouette. Historical and practical information presented as appropriate. (15-0) S

BIO 114 Animal Behavior - The Wolf 1 Sem Hr
Designed to provide student with introduction to study of animal behavior with focus on the wolf. Topics covered will include development of behavior patterns, social behavior, effects of imprinting, role of pheromones in sexual behavior, and hunting behavior. Student will prepare ethogram comparing different subspecies and various breeds of dogs. A weekend field trip is required with student paying own expenses. (15-0) S

BIO 116 Winter Ecology 1 Sem Hr
Explores the adaptations and coping behaviors of organisms and communities to the additional stresses placed on them by winter. Major topics include: weather and climate, hibernation, freezing avoidance, community changes, and behavior of animals. In addition, students will identify plants, animal tracks, insect galls, bird nests, and various kinds of snow conditions. A weekend field trip is required. Student must pay own expenses. (15-0) W

BIO 117 Birds of Michigan 1 Sem Hr
Identification of resident and migratory birds by sight and song. Includes bird nesting, feeding and territorial behavior. Taught primarily in the field. (15-0) S

BIO 118 Michigan Wildflowers 1 Sem Hr
Identification of common seasonal wildflowers of the open field and deciduous woods. Includes ecological significance of major families of flowers. Historical and practical information presented when appropriate. Taught primarily in the field. (15-0)

BIO 119 Stream Ecology 1 Sem Hr
Designed to introduce the student to the physical environmental factors that affect organisms inhabiting streams as well as the human influence. The energy flow through stream ecosystems will be emphasized along with the lifestyles and interdependencies of stream animals. Field and laboratory work on 2 different kinds of streams will be a necessary component. A weekend field trip will be required with the student paying own expenses. (10-10) FS

BIO 123 Survey of Plant Communities 1 Sem Hr
Discusses the influence of physical factors on the varieties of plant communities. Uses the interdependency of organisms as an underlying theme. Examines effects of humans on the nature of plant communities. Emphasizes field work and use of field keys and reference materials for plant identification. Weekend field trip is required. (10 - 20)

BIO 130 Introduction Chemistry and Cell Biology 3 Sem Hrs
An introduction to the principles and concepts of chemistry and cell biology for students entering allied health curricula. Includes basic math for science, the laws of thermodynamics, theory of atomic structure, chemical bonding, acids bases, and buffers; introduction to organic chemistry, cell structure and function, basic metabolic pathways, mitosis, meiosis, classical and physiological genetics. Recommended prerequisite to BIO 131 and 132 sequence. (30-30)

BIO 131 Anatomy and Physiology I 4 Sem Hrs
Prerequisite: BIO 130 with a C (2.0) minimum grade or successful completion of BIO 130 competency exam. Prepares students for various health care professions as first course in a two semester sequence. Gives major consideration to anatomy and physiology of tissues, sensory organs, blood and skin and to muscular skeletal, nervous and endocrine systems. Includes identification of tissues, bone, muscles, and nerves through the use of dissection and preserved materials. Includes physiology experiments related to muscle, nerve, sense organs, circulatory and endocrine functions. (45-45)

BIO 132 Anatomy and Physiology II 4 Sem Hrs
Prerequisite: BIO 131 with a C (2.0) minimum grade. Topics covered include: cardiovascular, lymphatic, respiratory, digestive, reproductive and urinary systems; nutrition, metabolism, embryology, fluids and electrolytes. Laboratory activities include: anatomical studies of these systems using preserved materials and models, as well as physiology experiments relating to metabolic rates, control of breathing, digestive enzymes & kidney physiology. Endocrine influence on these systems is discussed. Due to the rapid change in information in the area of human physiology, credits earned in this course may only be acceptable to specified Delta College health curricula for a certain period of time. Consult curricula guidesheets for exact information. (45-45)

BIO 160 Human Anatomy & Physiology Review 4 Sem Hrs
Prerequisites: Minimum grade of "C" in both BIO 131 and BIO 132 or successfully pass challenge exams for BIO 131 and BIO 132. Provides comprehensive review and update of contents of BIO 131 and BIO 132 using cooperative learning found in Health Care Team concept. Focuses on developing and strengthening abilities in critical thinking, problem solving, and student directed learning while establishing mastery of material. (45-45).

BIO 171 Integrated General Biology I 4 Sem Hrs
Prerequisite: CHM 111 or BIO 130 (with grade of "C" or better) is strongly recommended. Introduces scientific method and the diversity of life with an emphasis on biochemistry, cell structure and function, bioenergetics and metabolism, plus molecular, Mendelian, and developmental genetics. Intended for science majors (i.e., biology, pre-med, pre-dent, pre-pharm, etc.) and is first course in two course sequence. (45-45)

BIO 172 Integrated General Biology II 4 Sem Hrs
Prerequisite: BIO 171. The second course in a two-semester sequence for biology, pre-med, pre-dent, pre-pharm, etc., majors. Major topics include: a survey of the five kingdoms emphasizing comparative anatomy, development and ecological roles, patterns and mechanisms of evolution, population genetics, embryology, behavior, and ecology. (45-45) FW

BIO 199H Human Heredity and Sexuality 4 Sem Hrs
Prerequisites: High school Biology and Chemistry and approval by Honor's Program Director. Introduces human heredity, sexuality, and ethical implications of expanding scientific knowledge, including major topics: Mendelian, chromosomal and multifactorial inheritance, sexual development, AIDS, and molecular genetics. Explores topics like eugenics, cancer, IVF, genetic engineering, genetic screening, AIDS awareness, and sexuality. Non-honors students may enroll in this course. Credit may be earned in BIO 199H or BIO 145 but not both. (45-45)

BIO 203 General Microbiology 4 Sem Hrs
Prerequisite: BIO 111 or BIO 132, with a grade of "C" or better or permission of instructor. Surveys the microorganisms associated with infectious diseases, including the bacteria, viruses, fungi, and protozoans. Emphasizes the health care aspects, and the distribution and activities of microbes as related to the following: microbial nutrition and anatomy, growth, disease, epidemiology, infection and immunity. Uses labs that stress aseptic techniques and that develop skills necessary to handle microbes in health care settings, including the characterization of unknown microbes. (45-60)

BIO 215 Field Ecology 4 Sem Hrs
Prerequisite: BIO 111. This course will explore a variety of ecological interactions, with special emphasis on the detailed field analysis of particular ecosystems, the successional stages leading to a climax community, and the natural history of particular plants and animals. Techniques for the analysis of populations and collection of field data will be an integral part of the course. (45-45) S

BIO 230 Physical Anthropology and Archeology 4 Sem Hrs
An introduction to the origin and evolution of humankind's physical and cultural development. Major emphases are on the evidence and theories of human evolution and a survey of Old World and New World Archeology. Credit may be earned in BIO 230 or SOC 230 but not in both. (60-0) DFW

BIO 240 Human Anatomy 4 Sem Hrs
Prerequisite: BIO 171 or permission of instructor. The anatomy of the human body is presented on an integrated regional basis, supplemented by relevant histological, embryological, and functional considerations. The laboratory emphasizes regional dissections of the cat. Designed to meet the needs of biology majors and pre-professional science curricula, including all transfer health-related fields. (45-45) FD

BIO 241 Physiology 4 Sem Hrs
Prerequisite: BIO 171 or permission of instructor. Background in anatomy and chemistry is desirable, but not required. The aim of the course is to provide students with an introduction to the functional integration of the major organ systems of animals, with special emphasis on the human body. Emphasis is placed on the ways in which the various systems interact to maintain homeostasis of the individual. The laboratory experiments illustrate classical as well as modern approaches to the physiology of various organ systems. (45-60) WD

BIO 268 International Studies in Biology 1-4 Sem Hrs
A biologic interpretation of selected world regions with emphasis on natural history, fauna and flora, and ecological relationships. Includes class lectures, individual consultation, and international field study. Expenses for the field study must be borne by the student. (60-0) O

BIO 274 Introduction to Biotechnology 2 Sem Hrs
Prerequisite: CHM 112 and BIO 172. Provides a more detailed look at cell and molecular biology including an overview of the three laboratory applications essential to biotechnology: recombinant DNA, protein purification, and cell/tissue culture. Designed for students interested in biochemistry, molecular biology or biotechnology. Meets requirements of Ferris State University's Bachelor's program in Biotechnology. (30,0)

BIO 290-299 Special Projects in Biology O

BROADCASTING AND TELECOMMUNICATIONS COURSES

BRT 130 Electronic Media & Society 3 Sem Hrs
Examines electronic media and its impact on society. Analyzes how telecommunication systems are integrated into society through worldwide social, cultural, economic, political and educational linkages. (45-0)

BRT 149 Television Studio Operations I 3 Sem Hrs
Prerequisite or concurrent: BRT 150 and BRT 156 with C (2.0) minimum grades. Introduction to television studio production. Emphasis is on operation of television cameras, lenses, microphones, audio boards, lighting equipment, and videotape. Each student is scheduled for 30-40 hours as an observer/participant in studio production and in Master Control Room (MCR) operation. These times are arranged with the staff Productions and Operations Manager. (30-30) FW

BRT 150 Broadcast Writing 3 Sem Hrs
Prerequisite or concurrent: ENG 111. Introduction to broadcast writing from conceptualization to practical application. Major areas of scripting/writing emphasis include news, continuity, commercial, and documentary. (45-0) FW

BRT 153 Broadcast Performance 3 Sem Hrs
Introduction to broadcast performance. Emphasis is on presentations before microphones and cameras. Dress, movement, make-up, lighting, and delivery are all examined in such major performance situations as interviews, discussions, newscasts, commercials, and product demonstrations. (30-30) FW

BRT 154 Television Studio Operations II 3 Sem Hrs
Prerequisite: BRT 149 with C (2.0) minimum grade. Advanced principles, procedures, and techniques of television studio production. Through actual production work, emphasis is placed on producing, directing, staging, design, and operation of production facilities. Each student is scheduled for 30-40 hours as a participant in studio production and in Master Control Room (MCR) operation. These times are arranged with the staff Productions and Operations Manager. (30-30) FW

BRT 156 Audio Operations I 3 Sem Hrs
Introduction to the basic aspects of audio engineering: training in the performance characteristics and operation of audio equipment including microphones, consoles, reproduction facilities (audio record/play machines, turntables, compact disc players), and basic processing (equalization, echo, reverberation). Also covered will be the fundamentals of audio tape editing. (30-30) FW

BRT 157 Television Field Production 3 Sem Hrs
Prerequisite: BRT 149 with C (2.0) minimum grade. Principles, procedures, and techniques of television field (non-studio) production. Individual video productions in various technical formats are produced. Work with portable video equipment in the field is required. (30-30) F

BRT 177 Telecommunications Facilities 4 Sem Hrs
General overview of the basic operations and organization of telecommunications facilities, including radio and television broadcasting stations, cable television services, and corporate media production departments. Course will feature guest lecturers on the topics of programming, traffic, fundraising and underwriting, sales, promotions and public information, engineering and management. Within each category, similarities and differences between the various types of telecommunications facilities will be explored. On-site facility tours will be included. (60-0) O

BRT 220 Broadcast History, Law and Responsibility 4 Sem Hrs
Fundamental historic and legal principles of broadcasting. The history of broadcasting involves the origin, development, nature and function of radio and television stations and networks. The economics of the broadcasting industry are discussed along with self-regulation and social controls in modern society. The legal principles involve communications law regulatory acts and agencies, self-regulatory codes, labor unions, and the ethical and moral considerations in broadcasting. Pending legislation affecting broadcasting is examined, as well as future technical and legal developments. (60-0) O

BRT 222 Broadcast Journalism 3 Sem Hrs
Prerequisite: BRT 150 and BRT 156 with C (2.0) minimum grades. Principles of news gathering, editing, and presentation for broadcast. Course will include visits by area broadcast journalists to discuss issues and techniques. Students will complete field reporting exercises for radio and television news. (30-30) F

BRT 227 Broadcast Sales 3 Sem Hrs
Basic marketing concepts in broadcast time and spot sales. Information on the psychological, sociological, economic, and communicative aspects of salesmanship are applied to the broadcast industry. Actual sales presentations are prepared for hypothetical clients. Practicing professionals in the broadcast sales field share their experiences with the class. (45-0) O

BRT 230 Broadcast Audio Production 3 Sem Hrs
Prerequisite: BRT 153 and BRT 156 with C (2.0) minimum grades. Detailed study with an audio design orientation of various aspects of broadcast audio production. Areas of study to include basic training in technical listening, radio arts and entertainment production, and audio collage techniques and their use in broadcast dramas and documentaries. Students will be asked to produce mock radio programs of various formats in addition to other lab exercises. Potential for direct student interactive experience with WUCX/Delta Broadcasting FM Public Radio. (30-30) F

BRT 232 Radio News Production 3 Sem Hrs
Prerequisite: BRT 153 and BRT 222 with C (2.0) minimum grades. Advanced study and training in the production of news for radio. News services, field reporting, feature production, and newscast producing and editing will be explored. Students will be asked to regularly submit individual news productions in a variety of journalistic formats. Potential for direct student interactive experience with WUCX/Delta Broadcasting FM Public Radio. (30-30) F

BRT 234 Music Programming Workshop 3 Sem Hrs
Prerequisite: BRT 230 with C (2.0) minimum grade. In-depth study of music program production for radio. Comparison of commercial and public radio, and the elements and constraints shaping each format. Comprehensive survey of musical styles and how they're utilized to create programming formats, as well as the study of various music sources and services. Each student will be asked to weekly produce an hour-long mock radio program with complete and detailed play list and log. Various musical formats will be required. Potential for direct student involvement with WUCX/Delta Broadcasting Public Radio program production. (30-30) W

BRT 251 Television Producing and Directing 3 Sem Hrs
Prerequisite: BRT 154 and BRT 157 with C (2.0) minimum grades. Advanced techniques in the art of television producing and directing. Emphasis is placed on individual responsibility for complete program planning and organization: production equipment, personnel utilization, talent coordination, and camera direction. (30-30) W

BRT 256 Audio Operations II 3 Sem Hrs
Prerequisite: BRT 156 with C (2.0) minimum grade. Advanced principles, procedures, and techniques of audio engineering. Provides training in remote and field recording, studio and multitrack recording, and standard processing facilities (equalizers, effects generators, noise gates). A wide spectrum of industry applications will be discussed. (30-30) O

BRT 257 Advanced Television Field 3 Sem Hrs
Prerequisite: BRT 157 with C (2.0) minimum grade. Advanced principles, procedures, and techniques of television field (non-studio) production. Expands upon principles of field production including multiple camera remote operations and simple field troubleshooting. Editing techniques are explored in depth. (30-30) O

BRT 260 Assistant Director I 2 Sem Hrs
Prerequisite: BRT 149 with C (2.0) minimum grade and instructor approval. In-service training in television production in the areas of producing-directing, operations, and programming under the direct supervision of a television staff member. A minimum of four hours of work per week in television production is required. (0-60) O

BRT 261 Assistant Director II 2 Sem Hrs
Prerequisite: BRT 154 and BRT 260 with C (2.0) minimum grades and instructor approval. Expanded in-service training in the areas of producing-directing, operations, and programming under the direct supervision of a television staff member. A minimum of four hours of work per week in television production is required. (0-60) O

BRT 270 Current Trends and Issues - Seminar 2 Sem Hrs
Prerequisite: BRT 200 or instructor approval. Seminar in current issues that affect broadcasting and/or other areas of telecommunications. Provides timely information on trends and practices within the telecommunications industries discussed, as well as within related technologies and professions. (30-0) O

BRT 281 Internship 1 Sem Hr
Prerequisite: BRT 149 or BRT 156 with C (2.0) minimum grade and instructor approval. Provides hands-on production training in multiple areas of TV or Radio studio. Requires 5 hours per week under direct supervision of production staff member. (0-75)

BRT 282 Internship 2 Sem Hrs
Prerequisite: BRT 149 or BRT 156 with C (2.0) minimum grade and instructor approval. Provides hands-on production training in multiple areas of TV or Radio studio. Requires 10 hours per week under direct supervision of production staff member. (0-150)

BRT 283 Internship 3 Sem Hrs
Prerequisite: BRT 149 or BRT 156 with C (2.0) minimum grade and instructor approval. Provides hands-on production training in multiple areas of TV or Radio studio. Requires 15 hours per week under direct supervision of production staff member. (0-225)

BRT 290-299 Special Projects in Broadcasting or Telecommunications. O

COMPUTER ASSISTED DRAFTING COURSES

CAD 114 AutoCAD Introduction 2 Sem Hrs
Prerequisite: Previous industrial drafting experience or one year of high school drafting. AutoCAD software used to draft two dimensional multi-view drawings and three dimensional wire frame constructions. Completed projects include arrays, blocks, assigned properties, notations, and dimensions. Knowledge of the software, hardware and the MS-DOS operating system is acquired in the process of developing a Computer Aided Design and Drafting drawing for multi-pen plotting. Credit may be earned in either CAD 114 or SKCAD 114 but not in both. (30-0)

CAD 214 AutoCAD Techniques 2 Sem Hrs
Prerequisite: CAD 114 and either DRF 104 or DRF 105. Extends skills in the use of AutoCAD and builds efficiency in the production of CAD drawings. Developing two dimensional multi-view drawings fully noted, sectioned, and dimensioned is emphasized. Adding attributes and composing complete working drawings also covered. Students complete three dimensional drawings to prove and verify designs and display them as expanded multi-views. (30-0)

CAD 224 AutoCAD Advanced 2 Sem Hrs
Prerequisite: CAD 214. Develops skills in the use of AutoCAD and increases the options and methods of production of CAD drawings. Develops capability with AutoCAD SYSTEM VARIABLES, DIMENSIONING VARIABLES, CUSTOMIZING SCREEN & TABLET MENUS, SYMBOL LIBRARIES and SCRIPT FILES. Included is an introduction to AutoLISP, extended file manipulation and command of DOS. Both 2D multi-view and 3D wireframe drawings are assembled into working drawings. (30-0) FS

CAD 226 AutoCAD 3D Advantage 2 Sem Hrs
Prerequisite: CAD 214 or equivalent AutoCAD experience. Develops skills in the use of 3D AutoCAD and increases the options and methods of production of 3D AutoCAD drawings. Develops capability with 3D AutoCAD Wireframe, Surfaces and Solids, Model Space and Paper Space. Also includes extended experience with System Variables, file manipulation and command of DOS. (30-0)

CAD 290-299 Special Projects in Computer Assisted Drafting O

CHILD DEVELOPMENT COURSES

CD 104 Basic Training for Child Care 1 Sem Hr
Prerequisite: Students must be currently working in a licensed or registered family or group day care home or child care center. Designed for new, inexperienced and/or untrained child care workers. Designed to give a preliminary survey of child development, behavior management, safety and sanitation issues, and program operation. (15-0) O

CD 111 Introduction to Early Childhood Education 2 Sem Hrs
CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the field of early childhood education with an overall view of goals, children, schools, teaching techniques and professionalism. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development. (30-0) F

CD 111A Introduction to Early Childhood Education 2 Sem Hrs
Introduces the field of early childhood education with an overall view of goals, children, schools, teaching techniques and professionalism. Credit may be earned in CD 111A or CD 111 but not both. (30-0) O

CD 112 Early Childhood Programming 2 Sem Hrs
CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Provides the basic curriculum and organizational skills needed to work in an early childhood program. Identifies, develops and presents developmentally appropriate activities for the early childhood program. (30-0) F

CD 112A Early Childhood Programming 2 Sem Hrs
Provides the basic curriculum and organizational skills needed to work in an early childhood program. Identifies, develops and presents developmentally appropriate activities for the early childhood program. Credit may be earned in CD 112A or CD 112, but not both. (30-0) O

CD 113 Interaction with Young Children 3 Sem Hrs
CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the student to basic skills needed to interact with young children in a positive manner. Identifies instances of growth-producing and/or growth-restricting child behavior and the capability to recognize and interpret a variety of guidance techniques are the major objective of the course. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development or Nanny Program. (45-0) F

CD 113A Interaction with Young Children 3 Sem Hrs
Introduces the student to basic skills needed to interact with young children in a positive manner through a variety of guidance techniques. Credit may be earned in CD 113A or CD 113 but not both. (45-0) F

CD 114 Introduction to Child Development 3 Sem Hrs
CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the student to the topic of human growth and development from birth through adolescence. Emphasizes observation techniques and theories of human development. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development. Credit may be earned in CD 114 or 114A but not both. (45-0) F

CD 114A Introduction to Child Development 3 Sem Hrs
Introduces the student to the topic of human growth and development from birth through adolescence. Emphasizes observation techniques and theories of human development. Credit may be earned in CD 114A or CD 114 but not both. (45-0) F

CD 116 Families in the American Culture 3 Sem Hrs
PSY 223, CD 116 and CD 117 must be taken concurrently. Exceptions require Coordinator's approval. Provides the background needed to work with parents and children in a variety of family situations. Explores differing family roles and structures, and ways to support families in crisis. Emphasizes diversity in social classes, economic resources, cultural customs and tradition, and the need for parent-caregiver communication. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science in Child Development. Credit may be earned in CD 116 or CD 116A but not both. (45-0) W

CD 116A Families in the American Culture 3 Sem Hrs
Provides the background needed to work with parents and children in a variety of family situations. Explores differing family roles and structures, and ways to support families in crisis. Emphasizes diversity in social classes, economic resources, cultural customs and tradition, and the need for parent-caregiver communication. Credit may be earned in CD 116 or CD 116A but not both. (45-0) W

CD 117 Practicum for Early Childhood Assistant 6 Sem Hrs
Prerequisites: CD 111, 112, 113, 114 and 160. CD 115, 116 and 117 must be taken concurrently. Exceptions require Coordinator's approval. Focuses on interaction skills, child care skills and techniques for supporting a lead teacher in the day-to-day operation of an early childhood program. At least four days a week will be spent in an early childhood program, and students will meet with the instructor once a week. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development. (37.5-180) W

CD 160 Introductory Practicum in Child Development 2 Sem Hrs
 CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the early childhood classroom, observing and participating with young children and their teachers. Requires at least two half days a week in a quality early childhood program. (15-80) F

CD 200 Practicum in Child Development and Center Management 4 Sem Hrs
 Prerequisites: CD 111, 112, 113, 114, 116, 117, 160, PSY 223 Prepares for a lead teaching position, as well as, a program management position. Stresses the development of teaching skills and program management skills. At least four days a week will be spent in an early childhood program. (15-180)

CD 290-299 Special Projects in Child Development O

COOPERATIVE EDUCATION COURSES

Student must carry a minimum of 12 credit hours including the co-op class, maintain a minimum 2.0 grade point average, and work 15-25 hours per week on a job relating to his/her program. Co-op coordinator must approve the co-op work station.

Students are advised to consult with co-op coordinator about appropriate course number as course numbers depend upon program.

CED 103, 113, 123, 133, 143, 153, 163, 173, 183 1 Sem Hr Cooperative Education
 Prerequisite: Must be employed and have consent of coordinator. On-the-job training relating to the student's program. Evaluations made by the employer and the coordinator. Class will meet five hours per semester. Term paper and/or project required. Designed for student who is placed in co-op position for the last 1/3 of the semester. (5-75) FW

CED 104, 114, 124, 134, 144, 154, 164, 174, 184 2 Sem Hrs Cooperative Education
 Prerequisite: Must be employed and have consent of coordinator. On-the-job training relating to the student's program. Evaluations made by the employer and the coordinator. Class will meet ten hours per semester. Term paper and/or project required. Designed for student who is placed in co-op position for the last 2/3 of the semester. (10/150) FW

CED 105, 115, 125, 135, 145, 155, 165, 175, 185 3 Sem Hrs Cooperative Education I
 Prerequisite: Employable skill and consent of coordinator. Places the student in a program-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Class may meet with coordinator two hours per week. Term paper and/or project reports may be required. (15-225) FW

CED 106, 116, 126, 136, 146, 156, 166, 176, 186 3 Sem Hrs Cooperative Education II
 Prerequisite: CED 115, 125, 135, 145, 155, 165, 175, or 185. A continuation of Cooperative Education I, with additional responsibilities at work site. Term paper and/or project may be required. (15-225) FW

CED 120 Co-Op Retail Management 3 Sem Hrs
 Prerequisite: Employable skill and consent of coordinator. Places the student in a program-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Class may meet with coordinator two hours per week. Term paper and/or project reports may be required. (15-225) FW

CED 122 Co-op Fashion/Interior Design 3 Sem Hrs
 Prerequisite: Employable skill and consent of coordinator. Places the student in a curriculum-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Term paper and/or project reports may be required. (15/225) FW

CED 205, 215, 225, 235, 245, 255, 265, 275, 285 2 Sem Hrs Cooperative Education III
 Prerequisite: CED 106, 116, 126, 136, 146, 156, 166, 176, or 186. A continuation of Cooperative Education I and II, with additional responsibilities at work site. A five-hour workshop per semester. (5-225) FW

CED 206, 216, 226, 236, 246, 256, 266, 276, 286 2 Sem Hrs Cooperative Education IV
 Prerequisite: CED 205, 215, 225, 235, 245, 255, 265, 275, or 285. A continuation of Cooperative Education I, II, and III, with additional responsibilities at work site. A five-hour workshop per semester. (5-225) FW

CED 207, 217, 227, 237, 247, 257, 267, 277, 287 1 Sem Hr Cooperative Education V
 Prerequisite: CED 206, 216, 226, 236, 246, 256, 266, 276, or 286. A continuation of Cooperative Education I, II, III, and IV, with additional responsibilities at work site. A 2.5 hour workshop per semester and/or a major project or paper with one-on-one consultation with co-op coordinator may be required. (2.5-162.5) FW

CED 208, 218, 228, 238, 248, 258, 268, 278, 288 1 Sem Hr Cooperative Education VI
 Prerequisite: CED 207, 217, 227, 237, 247, 257, 267, 277, or 287. A continuation of Cooperative Education I, II, III, IV, and V, with additional responsibilities at work site. A 2.5 hour workshop per semester and/or a major project or paper with one-on-one consultation with co-op coordinator may be required. (2.5-162.5) FW

CED 290-299 Special Projects in Cooperative Education O

CHEMISTRY COURSES

CHM 101 General Chemistry I 5 Sem Hrs
 Fundamental principles, including atomic theory, periodic properties, states of matter, laws of chemistry combination, nomenclature, and chemical phenomena of interest to daily living. Designed as a preparation to CHM 111 for those students with no previous work in chemistry and to satisfy a science requirement in certain curricula. Students may use either CHM 101 or CHM 111, not both, to fulfill graduation requirements. (75-30)

CHM 105 Technical Chemistry I 5 Sem Hrs
 Provides basic principles of general chemistry with an emphasis on resource-based and hands-on learning. Includes chemical and physical properties of matter, measurement and chemical calculations, chemical terminology, reactions and processes. Includes use of industrial and field testing equipment. (60-60)

CHM 106 Technical Chemistry II 5 Sem Hrs
Prerequisite: Completion of CHM 105 with a grade of "C" or better. Provides inorganic and organic chemistry knowledge and technical skills' foundation essential for employment as a technician in a variety of chemistry-based professions. Includes analytical instrumentation use. (60-60)

CHM 111 General and Inorganic Chemistry I 4 Sem Hrs
Prerequisites: High school chemistry or CHM 101 and one year of high school algebra. A course with emphasis on an in-depth study of the theories and principles of atomic structure bonding, stoichiometry, states of matters, and properties of solutions. This course is required for students who intend to enroll for more than one year of chemistry. Meets the needs of chemistry majors. Students may use either CHM 101 or CHM 111, not both, to fulfill graduation requirements. (60-45)

CHM 112 General and Inorganic Chemistry II 4 Sem Hrs
Prerequisite: CHM 111. Continuation of CHM 111. A study of chemical equilibria in water, including ionization solubility, complex ion, acid-base phenomena, and oxidation reducing equilibria. The principles of electrochemistry, chemical thermodynamics, and chemical kinetics are discussed. Special topics such as the descriptive study of metals and non-metals are also discussed in this course. Meets the needs of chemistry majors. (60-45)

CHM 201 Organic Chemistry I 4 Sem Hrs
Prerequisite or concurrent enrollment in CHM 112. Provides the basic principles of organic chemistry with some emphasis on medical and pharmaceutical applications. Meets the needs of students in medical and health fields, or a major in chemistry. (60-0)

CHM 201L Organic Chemistry I Laboratory 1 Sem Hr
Prerequisite: CHM 112. Provides the basic principles of organic laboratory techniques, including note keeping, filtrating, recrystallizations, extractions, distillation methods, chromatographic methods, spectroscopic methods, chemical literature searches, report writing and presentation. Recommended to be taken concurrent with CHM 201. (0-60)

CHM 202 Organic Chemistry II 4 Sem Hrs
Prerequisite: CHM 201. Provides a continuation of content and process of CHM 201. (60-0)

CHM 202L Organic Chemistry II Laboratory 1 Sem Hr
Prerequisites: CHM 201 and CHM 201L. Provides a continuation of CHM 201L, applying the basic principles of synthesis, kinetics, and analysis. Recommended to be taken concurrently with CHM 202. (0-60)

CHM 211 Organic Chemistry I 4 Sem Hrs
Prerequisite or concurrent enrollment in CHM 112. Presents basic principles of organic chemistry with some emphasis on industrial type reaction mechanisms, kinetics, and thermodynamics. Along with CHM 211L (Lab) meets the needs of students in medical and health fields, in engineering fields, or a major in chemistry. (60-0)

CHM 211L Organic Chemistry I Laboratory 1 Sem Hr
Prerequisite CHM 112. Provides the basic principles of organic laboratory techniques including note keeping, filtrations, crystallizations, extractions, distillation methods, spectrometric and spectroscopic methods, chemical literature searches, report-writing, and presentation. Recommended to be taken concurrent with CHM 211. (0-60)

CHM 212 Organic Chemistry II 4 Sem Hrs
Prerequisite: CHM 211. Provides a continuation of content and process of CHM 211. (60-0)

CHM 212L Organic Chemistry II Laboratory 1 Sem Hr
Prerequisites: CHM 211 and CHM 211L. Provides a continuation of CHM 211L, applying the basic principles to synthesis, kinetics, and analysis. Recommended to be taken concurrently with CHM 212. (0-60)

CHM 221 Organic Biochemistry 3 Sem Hrs
Prerequisite: CHM 111, or CHM 101 with a minimum grade of B (3.0). Includes the structure and properties of the major classes of organic compounds, with emphasis on characteristic reactions of various functional groups, as well as fundamental concepts of bio-chemistry and the interrelationships of biologically active compounds with major metabolic pathways. (45-0) WD

CHM 222 Organic Biochemistry Laboratory 1 Sem Hr
Prerequisite: CHM 221 or concurrent enrollment. Laboratory experiments are designed to provide a variety of perspectives to supplement and enhance the student's background in organic and biochemistry. Experiments include extractions, syntheses, separations, analyses, comparison of reactions, and metabolic studies. (0-45) WD

CHM 230 Chemical Analysis/Instrumentation 4 Sem Hrs
Prerequisite: CHM 101 with permission of instructor or CHM 112. Presents the theory and practice of basic chemical preparation and analysis as performed in research and/or industrial settings. Emphasizes safety, detailed and accurate record keeping, data handling, and report writing. Beneficial to all science majors in Biology, Chemistry, Engineering, and other Applied Science Curricula. (45-45).

CHM 290-299 Special Projects in Chemistry O

COMPUTER INFORMATION SYSTEMS COURSES

CIS 108 GM Information Technology 2 Sem Hrs
Develops skills to use the current operating system on a computer. Introduces essential elements of computerized automotive technical support systems. (30-0)

CIS 109 UNIX Operating System 2 Sem Hrs
Provides a basic orientation to the UNIX Operating System. Emphasizes how to create, display, copy and print files. Includes how to work with directories, and how to connect to the Internet. (30-0)

CIS 112 Introduction to AS400 and PROFS 1 Sem Hr
Provides a basic orientation to the IBM AS/400. The class materials will cover PROFS (Professional Office) operations such as Electronic Mail and Calendar Scheduling. File creation, input screens, compiling and executing programs will be taught. Lab assignments will be required. (15-0)

CIS 114 Computer Fundamentals/IBM 1 Sem Hr
Provides a basic orientation to the IBM PC and its software. Includes utilization of software and hardware features. Introduces Windows Operating System, word processing, spreadsheet, and QuickBasic programming. Students who have taken CIS 133 or plan to enroll in CIS 133 should not take CIS 114. (15-0)

CIS 115 Computer Fundamentals/MacIntosh 1 Sem Hr
An introduction to the MacIntosh as a business computer. Features to be presented include the graphical user interface and mouse pointer, and a simple data base using Hypercard. Assignments using popular business application software packages will be given. Microcomputer compatibility will be addressed and students will observe IBM PC-emulation software and MacIntosh access of MS-DOS created files. (15-0) D

CIS 118 Windows Operating System 2 Sem Hrs
Provides a basic orientation to PC operating systems. Emphasizes Windows, managing the desktop, use of folders and the basic concepts of storage on floppy and hard disk. Includes use of text and graphics, the clipboard and other operating systems features needed in the daily operations of microcomputers. Reviews elementary DOS commands. (30-0)

CIS 119 Micro Hardware Install 1 Sem Hr
Prerequisite: CIS 118. A basic orientation to installing peripheral devices, modems, memory and boards. Preventive maintenance and trouble shooting features will be a major activity. A hands-on class with lab activities. Students will be placed in a repair facility for part of the class. (15-0) O

**CIS 120 Micro Computers in Business
Using MS Office**

3 Sem Hrs

Surveys small computer systems used for personal, business, and industrial applications including hardware, software, and operating systems. Uses MS Office for word processing, spreadsheets, and database software as well as the evaluation and selection of systems. (45-0)

CIS 128 WINDOWS NT Operating System

4 Sem Hrs

Prerequisite: Microcomputer background. Basis orientation to the WINDOWS NT Operating System. Emphasizes creation, copying, and recovery of files and the use of applications within this operating system that are needed for its daily operation. Presents installation and customizing features. (60-0)

CIS 130 Developing Programming Logic

2 Sem Hrs

Prerequisite: CIS 133. The use of programmer tools to design, develop the logic, and document programs. VTOCs (Visual Table of Contents), flowcharts, HIPO (Hierarchy plus Input-Process-Output) charts, Massi-Shneiderman charts, pseudocode, and walkthroughs will be used in the design and evaluation of typical problems. (30-0) FW

CIS 131 Advanced Programming Logic

2 Sem Hrs

Prerequisite: CIS 130 with a grade of "C" (2.0) or better. Expands on concepts introduced in CIS 130 Programming/Logic and on computer related applications. Includes multiple dimensional arrays, multiple control breaks, complex logical decision statements and multiple data file processing. Expands on the use of Nassi-Shneiderman diagrams and Pseudocode techniques to present logic. Completes a system group project utilizing multiple programs and master/index file processing. Covers batch and on-line programming techniques. Introduces Data Flow diagrams. (30-0)

CIS 132 Spreadsheet Fundamentals

2 Sem Hrs

Surveys Excel on the IBM PC including evaluation of spreadsheets, database, graphics, report formatting and macros as applied to personal small business and industrial settings. Credit may be earned in CIS 132 or CIS 134 but not in both. (30-0)

**CIS 133 Introduction to Computer
Information Systems**

4 Sem Hrs

Presents the terminology needed to become computer literate including hardware, software and connectivity. Reviews the analysis and design of computer systems and their effect on our lives. Introduces micro and mini computers, different operating systems, and Windows applications: word processing, e-mail, spreadsheets, database, graphics, and programming. (60-0)

CIS 134 Lotus 1-2-3

3 Sem Hrs

Surveys Lotus 1-2-3 on the IBM PC including evaluation of spreadsheets, data base, graphics, report formatting and macros as applied to personal, small business, and industrial settings. Development of a project is required. Credit may be earned in CIS 132 or CIS 134 but not in both. (45-0)

CIS 135 Information Storage and Retrieval

3 Sem Hrs

Prerequisite: CIS 112 and 133. Uses AS/400 tools to create a file, to modify or to delete records from files. DBMS (Data Base Management System) software is used to extract reports from an existing database. Includes query language. (45-0)

CIS 136 Microsoft EXCEL

3 Sem Hrs

Presents EXCEL features using personal and business applications. Emphasizes features and techniques to develop solutions to spreadsheet problems. Includes evaluation of spreadsheets, data base, report formatting, and macros. Compares EXCEL with other electronic spreadsheets. (45-0)O

CIS 139 QBASIC Programming I

2 Sem Hrs

Introduces microcomputers as a first class for computer programmers. Introduces programming design and development using the Microsoft Quick BASIC programming language. Emphasizes structured programming principles including internal and external program documentation; sequence, selection and repetition constructs; and modular programming using BASIC commands to accomplish the previous principles on IBM or compatible microcomputers. Credit may be earned in CIS 139 or CPS 140 but not in both. (30-0)

CIS 140 BASIC Programming

1 Sem Hr

Prerequisite: CIS 139 or instructor approval. Advanced BASIC commands will be presented along with continued use of structured programming principles. Arrays, sequential and random files, screen design and error handling will be covered. IBM or compatible microcomputers will be used. (15-0)

CIS 160 Introduction to the Internet

2 Sem Hr

Develops skills to access and use the Internet emphasizing easy information retrieval. Introduces essential Internet areas such as E-Mail, Search tools, Unix, Special Internet groups, Graphical Web Browsers, and Web page development. Credit may be earned in only one of the following: CIS 160, CIS 161, or CPS 160. (30-0)

CIS 161 Basic Applications/Internet

1 Sem Hr

Emphasizes accessing and using discipline specific information retrieval on the Internet, i.e., Economics, Chemistry, English, etc. Uses essential Internet areas such as E-Mail, Search tools, Special Interest groups, Web Page development and others. Application will come from a linked course. Credit may be earned in only one of the following: CIS 160 or 161, or CPS 160. (15-0)

CIS 180 Java Programming

3 Sem Hrs

Prerequisites: CIS/CPS 160 and CIS/CPS 170. Introduces the Java programming language. Includes Java classes and object-oriented programming. Includes control structures, string handling, arrays, and the use of Java components for building a program graphical user interface. Introduces creation of Java applets and programming for the World Wide Web. Credit may be earned in CIS 150 or CPS 150 but not both. (45-0)

CIS 201 Presentation Graphics using Powerpoint

2 Sem Hrs

Prerequisite: Knowledge of Windows Operating System. Develops beginning/intermediate skills in presentation and graphic layout for business and education presentations. Includes computer projection and creating of computer generated transparencies and handouts. Focuses on developing attractive, professional, effective, and well-timed visuals for different business settings using computer graphic presentation software. Credit may be earned in either CIS 201 or OSE 201 but not both. (30-0)

CIS 216 Local Area Networks

3 Sem Hrs

Prerequisite: Microcomputer background. Covers concepts, architectures, and implementation of Local Area Network (LAN) technology as well as a review of the evolution of Data Communications to its current status. Outside Lab assignments and project required. (45-0) FW

CIS 235 Systems Analysis and Design

3 Sem Hrs

Prerequisite: CIS 133, CIS 130, 1 semester of accounting, and a programming language course. A study of data processing systems and procedures involving analysis of various existing data processing applications in business and industry. Includes a study of integrated or total management information and data processing systems. Emphasis is given to developing detailed procedures in various areas of management. Designed to study the three phases: Analysis of present information flow; system specification and equipment; implementation and documentation of the system. (45-0) FW

CIS 240 Windows Programming Using Visual Basic

3 Sem Hrs

Prerequisite: CIS 140 and Windows experience. Writes programs in a Windows environment using Visual BASIC to design custom user interfaces with menus and dialog boxes. Discusses object-oriented fundamentals and event-driven programming concepts. Includes work with object linking and embedding (OLE) and creation of an engine for Database access. (45-0) O

CIS 241 Advanced Windows Programming Using Visual Basic

2 Sem Hrs

Prerequisite: CIS 240. Emphasizes writing advanced applications in the windows environment using visual basic. Discusses linking to other Windows applications, manipulating databases, and handling run-time errors. Includes creating user-friendly executable applications. (30-0)W

CIS 243 Report Program Generator Programming

3 Sem Hrs

Prerequisites: CIS 112 and 133. File, input, calculation and output specifications statements for reporting and routine accounting applications will be covered. Programs will be written, compiled, and tested using RPG-III. (45-0) WE

CIS 245 COBOL Programming

3 Sem Hrs

Prerequisite: CIS 112 and 130 or permission of instructor. Includes the advantages of Structured Cobol, potential applications and basic syntax. Emphasizes interactive programs, single dimension arrays and file access methods. Implements programs on an IBM AS/400. (45-0)

CIS 253 Advanced RPG

3 Sem Hrs

Prerequisite: CIS 243 or consent of instructor. The student will be able to design, code, compile, test, and document programs using RPG III which involve advanced programming concepts. (45-0) O

CIS 255 Advanced COBOL

3 Sem Hrs

Prerequisite: CIS 245 or consent of instructor. Includes advanced programming concepts, multiple dimension arrays, Sort/Merge, Screen Design Aid and subprograms. (45-0)W

CIS 260 Database-MS ACCESS

3 Sem Hrs

Prerequisite: Any microcomputer class. Emphasizes the advantages of database processing, modeling, and design. Discusses design concepts from the standpoint of the user. Uses Microsoft ACCESS. (45-0)

CIS 265 Programming in C

3 Sem Hrs

Recommend strong programming background. Presents general-purpose programming language useful for text processing, numerical calculations, data based programs and interface to operating systems. Covers normal programming procedures and subroutine calls written in other languages. (45-0)

CIS 266 C++ Object-Oriented Programming

3 Sem Hrs

Prerequisite: CIS 170 or CIS 265. Studies object-oriented programming concepts through the use of the C++ Language. Analyzes relationships between C and C++. Includes the use of classes, encapsulation, polymorphism, and inheritance for program design. (45-0) O

CIS 274 Computer Aided Decisions

2 Sem Hrs

Prerequisites: CIS 133 and GB 245. A interactive business simulation class using the IBM or compatible microcomputer will allow the student to practice the strategic decision making process in management/marketing. Students will explore the use of microcomputer application software in the area of decision support. Topics will include modeling, simulation, query languages, spreadsheets, and expert systems. Strategic decision making situations will be presented to illustrate formulation, solution, and analysis techniques utilized for unstructured decision making in the business environment. (30-0) O

CIS 290-299 Special Projects in Computer Information Systems O

CRIMINAL JUSTICE COURSES

CJ 101 Police Recruit Training

6 Sem Hrs

Prerequisite: Must be currently employed full-or part-time by a law enforcement agency, or have completed an Associate Degree upon entry, or will receive an Associate Degree upon completion of the Basic Police Training Academy. OSE 153, LWT 175, and LW 280 must be taken concurrently. Provides the basic training necessary to assume the duties of a police officer in preparation for MLEOTC (Michigan Law Enforcement Officers Training Council) state certification. Includes constitutional law, criminal law, laws of arrest, search and seizure, investigative techniques, first aid, firearms, motor vehicle laws, defensive tactics, and patrol techniques. Contact the Criminal Justice Training Center for information concerning admission requirements, enrollment, and current course fees. To obtain an Associate Degree in Criminal Justice, a student must earn a grade of C (2.0) or better in this course. (470-0)

CJ 110 Introduction to Criminal Justice

3 Sem Hrs

Introduction and career orientation to the field of law enforcement and criminal justice. Explores major areas including: the philosophical and historical background of the field; types of courts and agencies in the field and their responsibilities; administrative and technical problems in the field and an understanding of the Bill of Rights Amendments to the Constitution. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

CJ 111 Police Administration

3 Sem Hrs

Analyzes the functional divisions of the modern police department. Studies management operations, coordination of activities, communications, recruiting, training, public relations, and looks at the future of law enforcement. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

CJ 112 Police Operations

3 Sem Hrs

Study of patrol as a basic police function, including both the theoretical and functional aspects. Responsibilities of, purpose, methods, types and means of police patrol. Examination of patrol strength layout, beats, technological advancements affecting the patrol officer. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0) FW

CJ 182 Introduction to Security

3 Sem Hrs

An introduction and career orientation to the field of security. The major areas explored include: origins and development of security, proprietary security, risk analysis, fire protection, safety, internal theft control, insurance cargo security, computer security, institutional security, and the future of security. (45-0)

CJ 187 Current Issues in Security

3 Sem Hrs

A survey of current issues in security. Topics covered include: Terrorism, espionage, substance abuse, employee theft, computer vulnerabilities, and protection of information. (45-0) O

CJ 210 Introduction to Criminal Investigation

3 Sem Hrs

Prerequisite: CJ 110. Introduces criminal investigation procedures; includes theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence; methods used in police science laboratory; finger prints, ballistics, documents, serology, photography, and related forensic sciences. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

CJ 220 Crime Laboratory Techniques

3 Sem Hrs

Prerequisite: CJ 110. CJ 210 must be taken concurrently or prior to. Introduces scientific criminal investigation and criminalistics; includes the proper handling and transmittal of evidence to the crime laboratory, laboratory aids that are available, understanding of the probabilities related to examination of physical evidence. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-30)

CJ 230 Introduction to Corrections 3 Sem Hrs
Designed to provide an understanding of the agencies and institutions that have legal authority over the custody and supervision of offenders. Major areas discussed include the history and development of corrections, community based corrections, local, state and federal correctional institutions, and institutional administration. The correctional treatment of female, male and juvenile offenders will be explored. The role of corrections in the total system of criminal justice will also be covered. One of five courses which will meet the state requirement of 15 credit hours for employment as a correctional officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) E

CJ 232 Client Relations in Corrections 3 Sem Hrs
Designed to create an awareness of the effects of culture and discrimination on the attitude formation of individuals and assist students in identifying various professional responses to human behavior. One of five courses which will meet the state requirement of 15 credit hours for employment as a corrections officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EF

CJ 233 Client Growth and Development 3 Sem Hrs
Designed to enable students to differentiate the various factors that are involved in the development and growth of the criminal. Included will be a discussion of the biological, environmental, and psychological influences. Specific problems such as sexual, substance abuse and medical disorders will be reviewed. Intervention strategies will also be discussed. One of five courses which will meet the state requirement of 15 credit hours for employment as a corrections officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EW

CJ 235 Correctional Institutions and Facilities 3 Sem Hrs
Designed to present an overview of correctional institutions and facilities. Topics covered include the purpose of prisons and correctional institutions, treatment and rehabilitating programs, management and organization of correctional institutions, custodial care, safety and security, and future concerns. One of five courses which will meet the state requirement of 15 credit hours for employment as a correctional officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EF

CJ 236 Community Based Corrections 3 Sem Hrs
An examination of alternative correctional programs commonly referred to as Community Based Corrections. Major topics covered include: the development, history and Michigan laws governing community based corrections, diversion programs, pretrial release, probation, restitution and community service, temporary release, half-way houses, parole, female programs, and sex and drug offender programs. (45-0) WE

CJ 238 Legal Issues in Corrections 3 Sem Hrs
A study of the primary legal issues correctional personnel will be entrusted to enforce and safeguard. Topics covered include an overview of U.S. Constitutional law, the court process from arrest through trial, the structure and function of the U.S. and state courts, and prisoner rights. One of five courses which will meet the state requirement of 15 credit hours for employment as a correctional officer in the state of Michigan. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EFW

CJ 250 The Juvenile Offender 3 Sem Hrs
Major emphases are on the: Theories of causation as applied to juvenile delinquency; work of youth agencies; Michigan Juvenile Law and constitutional safeguards for juveniles; and new development in the prevention of juvenile crime. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0) EFW

CJ 270 Evidence and Criminal Procedure 3 Sem Hrs
A study of the rules of evidence as it affects the criminal justice process. Includes an overview of criminal procedure as it pertains to the rules of arrest, search, and seizure which regulate law enforcement and protects citizen's rights of privacy and presumed innocence. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

CJ 271 Criminal Law 3 Sem Hrs
Prerequisite: A previous course in Criminal Justice or American Government or permission of the instructor. Elements and proof in crime of frequent concerns in law enforcement with reference to principal rules of criminal liability. Importance of criminal law at the enforcement level is considered from crime prevention to courtroom appearance. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

CJ 275 Probation and Parole 3 Sem Hrs
Prerequisite: CJ 110 or CJ 230 or CJ 236 or permission of instructor. Examines the processes of probation and parole. Emphasizes management and supervision of individuals involved in the probation and parole process including interviewing, counseling techniques, and preparing court reports such as progress reports and presentence investigations. (45-0)

CJ 276 Issues in Criminal Justice Management 3 Sem Hrs
Prerequisite: CJ 110 or permission of instructor. Studies criminal justice agencies, their organizational structures, and issues related to managing these agencies. Examines local, state, federal, and privately operated criminal justice agencies as well as social, political, and economic factors that influence the operation and management of these agencies. (45-0)

CJ 277 Correctional Administration 3 Sem Hrs
Prerequisite: CJ 230 or permission of instructor. Analyzes the organizational structure of correctional agencies and institutions. Studies management philosophies, management theories, issues regarding personnel management, and budgeting. Also examines contemporary issues and dilemmas that correctional administrators face. (45-0)

CJ 280 Internship in Criminal Justice 3 Sem Hrs
Prerequisite: Minimum 15 credits Criminal Justice courses and permission of faculty. Field placement in a criminal justice setting (police department, court, juvenile center, etc.). An attempt will be made to find field education placements compatible with students' interests and agency needs. (10-160) SD

CJ 290-299 Special Projects in Criminal Justice O

COMPUTER NUMERICAL CONTROL COURSES

CNC 160 Computer Numerical Control Programming I 3 Sem Hrs
Prerequisites: MS 114 or SKTR 181, and MTH 103 or MT 110 or SKMA 103, or basic knowledge of machining processes and trigonometry. Primary emphasis will be on manually programming machines with various capabilities, including absolute and incremental positioning systems; tab sequential, word address, and menu driven formats; and machines with two-, three-, four-, and five-axis control. Secondary emphasis on computer assisted programming. Credit may be earned in CNC 160 or SKCN 160 but not in both. (45-0)

CNC 161 Computer Numerical Control Programming II 3 Sem Hrs
Prerequisites: CNC 160 or SKCN 161. Advanced training in computer assisted programming methods for computer numerical control machines. Various programming languages will be taught with emphasis placed on Compact II. Credit may be earned in either CNC 161 or SKCN 161 but not in both. (45-0)

CNC 201 CNC Tooling and Special Setups 2 Sem Hrs
Prerequisite: MS 114 or basic knowledge of machining processes. Primary emphasis will be on carbide insert selection, cutting speed, feed, tool geometry, surface finish, and work piece fixturing. Secondary emphasis will be on history of cutting tools, manufacture of carbide, advanced cutting materials. (30-0) E

CNC 211 Mitsubishi 410 Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches program methodology to produce quality parts using Mitsubishi 410 EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for demonstration and lab activities. Credit may be earned in CNC 211 or SKCN 211 but not in both. (0-100)

CNC 212 Heidenhain TNC 151 Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches program methodology to produce quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 212 or CNC 212 but not in both. (0-100)

CNC 213 OSP 5000 LG Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the OSP-5000 LG EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for demonstration and lab activities. Credit may be earned in SKCN 213 or CNC 213 but not in both. (0-100)

CNC 214 Anilam GXM Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the Anilam GXM EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 214 or CNC 214 but not in both. (0-100)

CNC 215 General Numeric 10TF Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the General Numeric 10TF EIA/ISO and conversational languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 215 or CNC 215 but not in both. (0-100)

CNC 216 Mazatrol M-32/M-2 Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience in CAD, machine tools, CNC programming, and personal computers and DOS. Emphasizes the programming methodology for producing quality parts using the Mazak M-32/M-2 Conversational programming language with secondary emphasis on tooling setups, part setups, and machining. Uses a Griffo Brothers, Inc. software package including: GB\DataEntry M-32, GB\GeoEntry M-32, GB\DataTransfer, GB\DataPrint M-32, and GB\DataTranslate M-32. Utilizes Delta College's Mazak VQC-15/40 M-2 four-axis double-column vertical machining center for program testing as well as employer's CNC equipment. Credit may be earned in either SKCN 216 or CNC 216 but not in both. (0-100)

CNC 217 JAPAX JAPT 3J Control 4 Sem Hrs
Prerequisites: CNC 212 or SKCN 212, or CNC 214 or SKCN 214, or CNC 216 or SKCN 216, or prior experience. Teaches the programming methodology for producing quality parts using the JAPT 3J EIA/ISO language, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine(EDM) for lab and demonstration. Credit may be earned in SKCN 217 or CNC 217 but not in both. (0-100)

CNC 218 Boston Digital SPC-II Control 4 Sem Hrs
Prerequisite: CNC 216 or SKCN 216, or prior experience. Teaches programming methodology to produce quality parts using the Boston Digital SPC-II EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Boston Digital BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 218 or CNC 218 but not in both. (0-100)

CNC 221 Surfcam I 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC and able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Surfcam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 221 or CNC 221 but not in both. (0-100)

CNC 222 E Z Cam IV 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for 2-D mill work, operating on a PC and downloading to the Heidenhain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Teaches the creation of error free part programs using the E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 222 or CNC 222 but not in both. (0-100)

CNC 223 TM APT GI 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work, operating on an Okuma TM-APT-G programming terminal downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 223 or CNC 223, but not both. (0-100)

CNC 224 Anicam 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anilam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP MTC-3 turning center, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 224 or CNC 224 but not in both. (0-100)

CNC 225 Mastercam 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as some other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 225 or CNC 225 but not in both. (0-100)

CNC 226 CAM M 32/M 2**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches programming methodology to produce error free programs using the Mazak M-32/M-2 EIA/ISO programming language on a PC with secondary emphasis on tooling setups, part setups, machining, and downloading to the Mazak VQC-15/40 M-2 four-axis double column vertical machining center using the Mazak CAM M-2 Programming software. Credit may be earned in SKCN 226 or CNC 226 but not in both. (0-100)

CNC 227 XL/NC**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC downloading to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 227 or CNC 227 but not in both. (0-100)

CNC 228 Nicam IV**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Uses off-line programming software for up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system. Credit may be earned in SKCN 228 or CNC 228 but not both. (0-100)

CNC 229 Expedite 3-D Programming**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Teaches off-line programming software for up to four-axis lathe work and up to five-axis mill work, operating on a PC and able to download to the SPC-II control on the BostoMatic machining system, as well as other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 229 or CNC 229, but not both. (0-100)

CNC 230 ACU-CARV**4 Sem Hrs**

Prerequisites: MS 115, CAD 114, CNC 161 and CNC 201. An off-line programming software for up to five-axis wire EDM work. Operates on a Club Tower Hawk 486/50 computer and is able to download to the JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, and other prismatic machining equipment. Primary emphasis on the creation of error-free part programs. (0-100)

CNC 251 Mitsubishi 410 Control Advanced**4 Sem Hrs**

Prerequisite: CNC 211 or SKCN 211, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Mitsubishi 410 EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for lab and demonstration. Credit may be earned in SKCN 221 or CNC 221 but not in both. (0-100)

CNC 252 Heidenhain TNC 151 Control Advanced**4 Sem Hrs**

Prerequisite: CNC 212 or SKCN 212, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 222 or CNC 222 but not in both. (0-100)

CNC 253 OSP 5000 LG Control Advanced**4 Sem Hrs**

Prerequisite: CNC 213 or SKCN 213, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the OSP-5000 LG EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis is on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 223 or CNC 223 but not in both. (0-100)

CNC 254 Anilam GXM Control Advanced**4 Sem Hrs**

Prerequisite: CNC 214 or SKCN 214, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Anilam GXM EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 224 or CNC 224 but not in both. (0-100)

CNC 255 General Numeric 10TF Control Advanced**4 Sem Hrs**

Prerequisite: CNC 215 or SKCN 215, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the General Numeric EIA/ISO and conversational control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 225 or CNC 225 but not in both. (0-100)

CNC 256 Mazatrol M 32/M 2 Control Advanced**4 Sem Hrs**

Prerequisite: CNC 216 or SKCN 216, or equivalent programming experience. Teaches canned cycles, subprograms, and programming from CAD files using the Mazak M-32/M-2 conversational programming language with secondary emphasis on parameters and maintenance. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for lab and demonstration. Credit may be earned in SKCN 256 or CNC 256 but not in both. (0-100)

CNC 257 JAPAX Japt 3J Control Advanced**4 Sem Hrs**

Prerequisite: CNC 217 or SKCN 217, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the JAPT 3J EIA/ISO control, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 227 or CNC 227 but not in both. (0-100)

CNC 258 Boston Digital SPC-II Control Advanced**4 Sem Hrs**

Prerequisite: CNC 218 or SKCN 218, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the Boston Digital SPC-II EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 228 or CNC 228 but not in both. (0-100)

CNC 261 Surfcam II**4 Sem Hrs**

Prerequisites: CNC 221 or SKCN 221, or equivalent programming experience. Teaches the advanced powers of Concept software for more intricate programming of two-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Surfcam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 261 or CNC 261 but not both. (0-100)

CNC 262 EZ Cam IV Advanced**4 Sem Hrs**

Prerequisites: CNC 222 or SKCN 222, or equivalent programming experience. Teaches the advanced powers of E-Z CAM IV software for more intricate programming of 2-D mill work, operating on a PC and downloading to the Heidenhain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Emphasizes the creation of error free part programs using the E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 262 or CNC 262 but not both. (0-100)

CNC 263 TM-APT-GL Advanced**4 Sem Hrs**

Prerequisites: CNC 223 or SKCN 223, or equivalent programming experience. Teaches the advanced powers of TM-APT-GL software for more intricate programming of two-axis lathe work, operating on an Okuma TM-APT-G programming terminal and downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 263 or CNC 263 but not both. (0-100)

CNC 264 Anicam Advanced**4 Sem Hrs**

Prerequisites: CNC 224 or SKCN 224, or equivalent programming experience. Teaches the advanced powers of Anicam software for more intricate programming of two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anicam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 264 or CNC 264 but not both. (0-100)

CNC 265 Mastercam Advanced**4 Sem Hrs**

Prerequisites: CNC 225 or SKCN 225, or equivalent programming experience. Teaches the advanced powers of Mastercam software for more intricate programming of up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on downloading a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 265 or CNC 265 but not both. (0-100)

CNC 266 Advanced Cam M-32/M-2**4 Sem Hrs**

Prerequisites: CNC 226 or SKCN 226, or equivalent experience. Teaches the use of macros, macro programming methodology, macro call statements, and nesting using the Mazak M-32/M-2 EIA/ISO programming language with secondary emphasis on parameters and maintenance. Software is ASCII text editor and a Griffio Brothers, Inc. GB\DataEntry M-32, GB\GeoEntry M-32, GB\DataTransfer, GB\DataPrint M-32, and GB\DataTranslate M-32 running on a PC. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for demonstration and lab. Credit may be earned in SKCN 266 or CNC 266 but not both. (0-100)

CNC 267 XL/NC ADVANCED**4 Sem Hrs**

Prerequisites: CNC 227 or SKCN 227, or equivalent programming experience. Teaches advanced powers of the XL/NC software for intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 267 or CNC 267 but not both. (0-100)

CNC 268 Nicam IV Advanced**4 Sem Hrs**

Prerequisites: CNC 228 or SKCN 228, or equivalent programming experience. Teaches the advanced powers of the NICAM IV software for intricate programming of up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the S2PC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of programs to the turning center, mill, machining center/system. Credit may be earned in SKCN 268 or CNC 268 but not both. (0-100)

CNC 269 Expedite 3-D Advanced**4 Sem Hrs**

Prerequisites: CNC 229 or SKCN 229, or equivalent programming experience with the Expedite 3-D software. Teaches advanced powers of the Expedite 3-D software for intricate programming of up to four-axis lathe work and up to five-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 269 or CNC 269 but not both.

CNC 270 Acu.Carv Advanced**4 Sem Hrs**

Prerequisites: CNC 230 or previous programming experience with the ACU.CARV software. Using the advanced powers of the ACU.CARV software for more intricate programming of up to five-axis mill work and up to four-axis wire EDM work, operation on a PC and able to download to the JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, as well as some of the other prismatic machining equipment in the CNC lab. Primary emphasis will be on the creation of error free part programs using the ACU.CARV programming language, including part geometry, tool path, and debugging. Secondary emphasis will be on the downloading of a program to the mill, machining center/system, or wire EDM. One hundred (100) hours will be lab and demonstration. Credit may be earned in either SKCN 270 or CNC 270 but not in both. (0-100)

CNC 280 Acu.Carv Ads Off-Line Programming System**4 Sem Hrs**

Prerequisite: CNC 270 or SKCN 270, or previous programming experience with AutoCAD and ACU.CARV softwares. Emphasizes the use of AutoCAD and ACU.CARV ADS softwares to create surfaces and tool paths for programming of up to five-axis mill work and up to four-axis wire EDM work. Includes the downloading of error-free PC created programs to JAPT 3J control on the Japax wire EDM, SCP-II control on the BostoMatic machining system, as well as some other prismatic machining equipment. Credit may be earned in CNC 280 or SKCN 280 but not in both. (0-100)

CNC 284 CNC Practicum**4 Sem Hrs**

Prerequisite: CNC 21X on the machine used for the practicum. Students use actual working drawings of their own or supplied by instructor to program, setup, and machine a sample lot of parts to simulate a production run. (0-100) E

CNC 290-299 Special Projects in Computer Numerical Control O

CHEMICAL PROCESS INDUSTRIES COURSES

CPI 110 Introduction to Chemical Process Industries 2 Sem Hrs
Provides overview of Chemical Process Industries and Chemical Technology with focus on the role of the process operator and the chemical technician. Introduces concepts of safety, regulation, laws affecting the job and the industry, and quality control. Includes study skills and attitudes necessary for study of science/technology as well as means of continuing professional and personal growth. Credit may be earned in CPI 110 or CT 100 but not both. (30-0)

CPI 120 Introduction to Process Operations 2 Sem Hrs
Provides an overview of process operations including analysis of process flow sheets. Details description and analysis of operations as they involve reactor, distillation columns, heat exchangers, and other types of operations in the typical chemical plant. (30-0)

CPI 290-299 Special Projects in Chemical Process Industries Courses O

CHEMICAL TECHNOLOGY COURSES

CT 100 Introduction to Chemical Technology 2 Sem Hrs
Provides overview of Chemical Process Industries and Chemical Technology with focus on the role of the process operator and the chemical technician. Introduces concepts of safety, regulation, laws affecting the job and the industry, and quality control. Includes study skills and attitudes necessary for study of science/technology as well as means of continuing professional and personal growth. Credit may be earned in CT 100 or CPI 110 but not both. (30-0)

CT 290-299 Special Projects in Chemical Technology O

COMPUTER SCIENCE COURSES

Course prerequisites are stated in terms of Delta courses or the number of years of high school mathematics or computer science courses and are intended to insure that students choose the appropriate computer science course. Individuals may have a background equivalent to a stated prerequisite in which case they should consult a counselor for assistance in evaluating equivalencies. Any student who feels the circumstances warrant waiving a prerequisite should consult the Mathematics and Computer Science Division Chair for approval. It is recommended that a grade of C (2.0) or better be earned in any course used as a prerequisite for a computer science course.

CPS 125 Computer Literacy 3 Sem Hrs
Introduces computers and their applications, programming and operating systems. Examines applications such as word processing, database, spreadsheet, and graphics. Includes the specialized vocabulary of computers with major emphasis on the use of Macintosh computers. May not be substituted for CIS 133. (45-0)

CPS 140 QBASIC Programming 2 Sem Hrs
Introduces program design and development using the BASIC programming language. Emphasizes structured programming principles including internal and external program documentation, sequence, selection, and repetition. Credit may be earned in CIS 139 or CPS 140 but not in both. (30-0)

CPS 160 Introduction to Internet 2 Sem Hrs
Develops skills to access and use the Internet emphasizing easy information retrieval. Introduces essential Internet area such as "E-MAIL", Search Tools, Unix, Special Internet groups, Graphical Web Browsers, and Web Page development. Credit may be earned in only one of the following: CIS 160, or CIS 161, or CPS 160. (30-0)

CPS 165 Fortran Programming 3 Sem Hrs
Prerequisites vary for program of study: Technology: MTH 113, Business: MTH 120, Engineering: MTH 151; prerequisite courses may also be taken concurrently. Introduces the FORTRAN programming language as an aid to problem solving. Emphasizes solving scientific or mathematical problems. Requirements include writing, debugging and executing several programs. (45-0)

CPS 170 C++ Programming I 3 Sem Hrs
Uses the C++ language to introduce program design and development. Develops solutions to computing problems through problem definition, algorithm design, and coding. Includes documentation, screen design, and formatting of output. Credit may be earned in only one of the following: CPS 170, CIS 170, or EGR 170. (45-0)

CPS 171 Computer Science I 3 Sem Hrs
Prerequisite: MTH 119 and one of the following courses: CPS/CIS/EGR 170 or equivalent introductory level programming experience; permission of instructor. Introduces essential foundations of computer science. Includes algorithm design, development, and implementation using a procedural programming language. Utilizes structured data types as well as elementary sorting and searching algorithms. Applies the discipline and methodologies of software engineering. (45-0)

CPS 180 Java Programming 3 Sem Hrs
Prerequisites: CIS/CPS 160 and CIS/CPS 170. Introduces the Java programming language. Includes Java classes and object-oriented programming. Includes control structures, string handling, arrays, and the use of Java components for building a program graphical user interface. Introduces creation of Java applets and programming for the World Wide Web. Credit may be earned in CIS 180 or CPS 180 but not in both. (45-0)

CPS 271 Computer Science II 3 Sem Hrs
Prerequisite: CPS 171. Introduces important data structures, data abstractions, and object-oriented programming. Includes recursive programming solutions, sorting and searching algorithms, file organization, and pointer variables. Studies key data structures including lists, stacks, queues, and trees. (45-0)

CPS 280-289 Restricted Enrollment Computer Science Courses O

CPS 290-299 Special Projects in Computer Science O

CREDIT UNION MANAGEMENT COURSES

CRM 160 Principles of Credit Unions 3 Sem Hrs
Designed to familiarize students with basic concepts of credit unions and the Credit Union Movement. Traces the historical development of credit unions as non-profit, member-owned financial cooperatives, and deals with operational, regulatory, legal, leadership, risk management and ethical considerations. Emphasizes credit union similarities with and differences from other categories of financial institutions. Note: Final examination will qualify for CCUE credit for those also enrolled in CCUE course #100. (45-0) F

CRM 201 Credit Union Financial Counseling 3 Sem Hrs
Focuses on responsibility of the credit union toward member as customer and owner. Emphasizes role of planning in any counseling exercise, and works toward satisfaction of member needs through listening, exploring skill development, problem-solving and decision-making. Looks at financial planning on a personal and family level, including retirement and estate planning. NOTE: Final examination will qualify for CCUE credit for those also enrolled in CCUE course #800. (45-0) F

CRM 212 Credit Union Accounting 3 Sem Hrs
Prerequisite: ACC 211 with a C (2.0) minimum grade. Includes a study of credit union corporate basic theory and methodology, reporting of changes in financial position, analysis of various reserve accounts, and accounting data as used in performance measurement, regulatory compliance, decision making, planning, and control. Note: Final examination will qualify for CCUE credit for those also enrolled in CCUE course #400. (45-0) W

CRM 290-299 Special Projects in Credit Union Management O

DENTAL ASSISTING COURSES

DA 110 Pre Clinical Dental Assisting 5 Sem Hrs
DA 113, DA 114, and DA 117 must be taken concurrently. Provides the opportunity to develop the skills for general chair side clinical procedures. Implements OSHA's practical skills. (30-90) F

DA 113 Oral Anatomy and Physiology 4 Sem Hrs
DA 110, DA 114, and DA 117 must be taken concurrently. Introduces basic structures and physiology of the oral cavity, head and neck. Includes oral histology, embryology, and pathology related to the development of the dental structure. (60-0) F

DA 114 Dental Materials I 1 Sem Hr
DA 110, DA 113, DA 117 must be taken concurrently. Introduces the theory and properties of dental materials. Emphasizes direct dental restorations procedures. (15-0) F

DA 117 Dental Health and Nutrition 1 Sem Hr
DA 110, DA 113, and DA 114 must be taken concurrently. Emphasizes oral hygiene, general and applied nutrition as well as patient motivation techniques. Dental health projects required. (15-0) F

DA 120 Clinical Dental Assisting 6 Sem Hrs
Prerequisites: BIO 102, DA 110, DA 113, DA 115, DA 117, and HSC 140. DA 123, DA 123L, DA 125, and BIO 101 must be taken concurrently. Presents the theory and application of dental specialties. Requires assignments in off campus facilities and Dental Hygiene Clinic. (45-90) W

DA 123 Dental Radiology 2 Sem Hrs
Prerequisites: BIO 102, DA 110, DA 113, DA 114, DA 117, HSC 140. Concurrent enrollment in DA 120, DA 123L, and DA 125. Introduces the principles of radiation physics, factors affecting radiographic images, biological effects of radiation, and the protective measures necessary in dental radiation. (30-0) W

DA 123L Dental Radiology Lab 2 Sem Hrs
Prerequisites: BIO 102, DA 110, DA 113, DA 114, DA 117, and HSC 140. Concurrent enrollment in DA 120, DA 123, and DA 125. Provides laboratory practice in the application of commonly used dental radiographic procedures utilizing manikins and clinic patients. Credit may be earned in DA 123L or DH 123L but not both. (0-60) W

DA 125 Dental Materials II 2 Sem Hrs
Prerequisites: BIO 102, DA 110, DA 113, DA 114, DA 117, HSC 140. Concurrent enrollment in DA 120, DA 123, DA 123L. Introduces the theory and manipulation of indirect and adjunct restorative procedures. (15-30) W

DA 126 Dental Laboratory Procedures 1 Sem Hr
Prerequisites: Completion of DA 110, DA 113, BIO 102, and HSC 140 with a "C" (2.0) minimum grade in each. The manipulation of impression materials and gypsum products. Field trips may be required. (0-30) WD

DA 128 Expanded Dental Functions 3 Sem Hrs
Prerequisites: DA 120, DA 123, DA 123L, DA 125, and BIO 101. Concurrent enrollment in DA 129. Provides knowledge and skills needed to perform expanded functions, as permitted by the current rules and regulations of the Department of Licensing and Regulations and the Michigan State Board of Dentistry. (15-60) S

DA 129 Dental Office Management 3 Sem Hrs
Prerequisite: Completion of DA 120, DA 123, DA 123L, DA 125 and BIO 101 with a minimum "C" (2.0) grade in each. Concurrent enrollment in DA 128. Emphasizes fundamental office skills in managing patient and business records, handling the telephone and visitors, controlling the appointment book, and processing dental claim forms. Includes basic financial procedures and computer use. (45-0) SD

DA 130 Dental Assisting Internship 7 Sem Hrs
Prerequisite: Completion of DA 128, DA 129 with a minimum of "C" (2.0) minimum grade. Concurrent enrollment in DH 133. Provides the opportunity to perform chairside assisting techniques, laboratory procedures, and dental office management skills. while under direct supervision. Students will be assigned to local dental care facilities. (0-320) SD

DA 133 Dental Assisting Internship Seminar 1 Sem Hr
Prerequisite: DA 128 and DA 129. Concurrent enrollment in DA 130. Allows students opportunities to share internship experiences and future educational goals. Develops resume writing and job seeking skills. (15-0) S

DA 250 Radiography for Dental Auxiliaries 3 Sem Hrs
Prerequisite: Knowledge of dental anatomy and terminology plus current employment of at least one year as a chair side dental assistant. Introduces the theory and application of radiation characteristics, production, protection and exposure effects related to the production of diagnostic radiographs. Students must provide patients for laboratory activities. (24-21)

DA 290-299 Special Projects in Dental Assisting O

DENTAL HYGIENE COURSES

DH 100 Dental Hygiene Profession 1 Sem Hr
Provides overview of the Dental Hygiene Profession including the history and organizational structure of the American Dental Hygiene Association, and the ethical/legal aspects of the profession. Required dental office observation required. (15-0)

DH 101 Dental Anatomy I 2 Sem Hrs
Examines terminology of dental anatomy, morphology of the human dentitions and occlusion. (30-0)

DH 110 Dental Infection Control 2 Sem Hrs
Prerequisite: Current validation for Dental Hygiene Program. Presents theory and application of procedures and skills necessary to control transmissible diseases. Provides opportunities to practice Universal Precautions for the patient, professional, environment, and facilities. (15-30) F

DH 111 Oral Examinations 1 Sem Hr
Prerequisite: DH 100 and 101 each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Provides opportunity to practice skills necessary to perform dental charting and oral cancer examinations. Examines the various parts of dental appliances. (0-30) F

DH 112 Medical Assessment/Emergencies 2 Sem Hrs
Prerequisites: DH 100 and 101 each with a C (2.0) minimum grade, current HCP CPR certification and admission to the Dental Hygiene Program. Provides the opportunity to practice assessment, identification, and dental hygiene treatment protocol of septicemic emergencies which may occur in treating the dental patient. (15-30) F

DH 114 Oral Health 2 Sem Hrs
Prerequisites: DH 100 and 101, each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Presents theory of the characteristics, origin, and development of fluoride, dentifrices, mouth-washes, and deposits that affect the tooth surface. Emphasizes tooth brushing, auxiliary aids, dental appliances, care of pre/post surgical and oral cancer patients. (15-45) F

DH 115 Clinical Techniques 5 Sem Hrs
Prerequisites: DH 100 and 101 each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Presents theory and application of various periodontal instruments, plaque and stain removal and instrument sharpening skills that are necessary for proper use in the dental hygiene diagnostic and therapeutic services. Emphasizes proper documentation of findings. (45-90) F

DH 116 Prevention Nutrition 3 Sem Hrs
Prerequisites: DH 100 and 101, each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Provides theory of foods, essential nutrients and their effects on general health as well as oral health. Emphasizes nutrition in dentistry for the dental hygienist in prevention and health promotion. (45-0) F

DH 118 Head and Neck Anatomy 3 Sem Hrs
Prerequisites: DH 100 and 101, each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Presents anatomy of the human head and neck and surrounding structures. Emphasizes basic anatomical terminology, landmarks, and a complete description of the skeletal, muscular, lymphatic, vascular, and innervation systems. (30-45) F

DH 120 Periodontics I 3 Sem Hrs
Prerequisites: DH 110, 114, 115, 116, 117 and 118 each with C (2.0) minimum grade. The student must understand the biology of the periodontium; the etiology; pathology, and epidemiology of periodontal diseases, and the prevention and treatment of periodontal diseases. (30-0) WD

DH 121 DH Seminar I 2 Sem Hrs
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Introduces fundamentals of treatment planning, recall systems, case study documentation, patient management, techniques for clinical fluoride and care of the dental appliances. (30-0) W

DH 122 Oral Histology and Embryology 3 Sem Hrs
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Provides theory of the embryological development of the oral cavity and identification and classifications of normal and abnormal conditions of the oral cavity and supporting structures. Includes microscopic study of the histology of the human dentition and the surrounding supporting structures. (45-0) W

DH 123 Dental Radiography 2 Sem Hrs
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Presents theory of characteristics of radiation, components and functions of x-ray equipment, x-ray production, radiation biology and safety as well as processing and technical errors. (30-0) W

DH 123L Dental Radiography Lab 1 Sem Hr
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Introduces the techniques of exposing, processing, and mounting dental radiographs, as well as radiographic interpretation. (0-45) W

DH 124 Pharmacology For Dental Hygiene 2 Sem Hrs
Prerequisites: DH 120, 121, 122, 123, 123L and 125 each with a C (2.0) minimum grade. Provides introduction to drugs and anesthetic agents commonly used in the dental practice. Includes origin, physical and chemical properties, methods of administration, and biological effects on the various body systems. (30-0) S

DH 125 Clinical Dental Hygiene I 4 Sem Hrs
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Provides the opportunity to implement basic treatment skills with clinic patients. (0-120) W

DH 131 Dental Hygiene Seminar II 1 Sem Hr
Prerequisites: DH 120, 121, 122, 123, 123L and 125 each with a C (2.0) minimum grade. Emphasizes the study of techniques and philosophies of treating patients with special needs. (15-0) S

DH 135 Clinical Dental Hygiene II 3 Sem Hrs
Prerequisites: DH 120, 121, 122, 123, 123L, and 125 each with a C (2.0) minimum grade. Provides the opportunity to practice and increase the students proficiency skill levels learned from previous Dental Hygiene courses. (0-90) S

DH 210 Periodontics II 2 Sem Hrs
Prerequisites: DH 124, 131, and 135 each with a C (2.0) minimum grade. Provides the opportunity for assessment, documentation and treatment of the periodontal patient and to demonstrate ultrasonic scaling, root planing and irrigation. (15-30) F

DH 213 Oral Pathology 3 Sem Hrs
Prerequisites: DH 124, 131, and 135 each with a C (2.0) minimum grade. Introduces the process, identification, and classification of oral diseases. Emphasizes the prevention of the diseases with the scope of responsibility and practice of the dental hygienist. (45-0) F

DH 214 Dental Materials 4 Sem Hrs
Prerequisites: DH 124, 131, and 135 each with a C (2.0) minimum grade. Presents theory and clinical application related to properties and manipulation of dental materials and devices used in dental procedures. (45-45) F

DH 215 Clinical Dental Hygiene III 6 Sem Hrs
Prerequisites: DH 124, 131, and 135 each with a C (2.0) minimum grade. Provides the opportunity to practice and increase the students' proficiency skill levels of advanced instruments from previous Dental Hygiene courses. (0-180) F

DH 216 Community Dentistry I 2 Sem Hrs
Prerequisites: DH 124, 131, and 135 each with a C (2.0) minimum grade. Provides theoretical base for assessing, designing, implementing, and evaluating dental health improvement programs. (30-0) F

DH 220 Introduction to Orthodontics 2 Sem Hrs
Prerequisites: DH 210, 213, 214, 215, and 216, each with a C (2.0) minimum grade. Introduces the dental hygienist to the concepts of preventive and interceptive techniques in the treatment of disharmonies in dental occlusion. Includes Myofunctional Therapy and the application of orthodontic appliances. (15-30) W

DH 222 Case Study Documentation 1 Sem Hr
Prerequisites: DH 210, 213, 214, 215, and 216, each with a C (2.0) minimum grade. Provides opportunity to present specific case documentation on dental patients' conditions. (15-0) W

DH 225 Clinical Dental Hygiene IV 6 Sem Hrs
Prerequisites: DH 210, 213, 214, 215, and 216, each with a C (2.0) minimum grade. Provides the opportunity to perfect skills learned in all previous dental hygiene courses. Includes exposure to nontraditional instruments. (0-180) W

DH 227 Community Dentistry II 1 Sem Hr
Prerequisites: DH 210, 213, 214, 215, and 216, each with a C (2.0) minimum grade. Provides opportunity for assessment of dental health needs for target populations. Includes design, implementation, and evaluation of dental health improvement programs in non-traditional settings. Evening, weekend, and holiday assignments may be required. (0-45) W

DH 228 Dental Hygiene Seminar III 1 Sem Hr
Prerequisites: DH 210, 213, 214, 215, and 216, each with a C (2.0) minimum grade. Provides theory and techniques of treating patients with chemical dependencies and special needs. Includes the coordination of treatment phases of the AIDS patient. (15-0) W

DH 290-299 Special Projects in Dental Hygiene O

DRAFTING COURSES

DRF 101 Drafting for Graphic Art 1 Sem Hr
A course designed to develop basic drafting skills for people entering the field of Graphic Arts. Includes proper use of equipment, drawing and measuring lines, measuring space, sheet layout and orthographic projections. (5-10) FDWD

DRF 104 Basic Mechanical Design 4 Sem Hrs
Developed for students with no drafting experience, less than one year of high school mechanical drafting, or for students with less than a C (2.0) grade in mechanical drafting. Provides instruction and practice to develop skill in spatial visualization, sketching, multi view instrument drawing, section views, design concept presentation, pictorial drawing, and American National Standards Institute (ANSI) conventional drafting and dimensioning standards. Credit may be earned in DRF 104 or DRF 105 but not in both. (15-90)

DRF 105 Beginning Mechanical Design 3 Sem Hrs
Prerequisite: One year of high school mechanical drafting with a minimum grade of C (2.0). Provides instruction and practice to develop skill in spatial visualization, sketching, multi view instrument drawing, section views, design concept presentation, pictorial drawing, and American National Standards Institute (ANSI) conventional drafting and dimensioning standards. Credit may be earned in DRF 104 or DRF 105 but not in both. (15-75)

DRF 107 Intermediate Mechanical Design 3 Sem Hrs
Prerequisite: DRF 104 or 105, and CAD 114. Applies computer-aided and manual methods to the mechanical design process using single and multi-view dimensioning, tolerancing, limit dimensions, thread representation and symbols, orthographic projection, auxiliary views, revolution views, design specifications, working drawings, and vectors for analysis. (30-30)

DRF 120 Beginning Industrial Blueprint Reading 2 Sem Hrs
Course designed for machine operators, welders, or assemblers with little or no blueprint reading experience. Includes manipulation of basic fractions and decimals and as applied to the reading of blueprints, reading measuring instruments, basic geometric figures, drafting and blueprinting procedures, basic orthographic projection auxiliary and sectional views, detail and assembly drawings, dimensioning and tolerances, title block, change block, list of materials, and notes. Credit may be earned in DRF 120 or WELD 120 but not both. (30-0) WE

DRF 122 Blueprint Reading for Welders and Fabricators 2 Sem Hrs
Prerequisite: DRF 120 or basic knowledge of blueprint reading. Course designed specifically for welders and fabricators working with welding drawings. A more in-depth treatment of basic blueprint information, orthographic projection, assembly drawings, and geometric tolerancing. Emphasis placed on welding symbols and welding drawings. Credit may be earned in DRF 122 or WELD 122 but not both. (30-0) WE

DRF 124 Blueprint Reading for Machine Tool Operators 2 Sem Hrs
Prerequisite: DRF 120 or permission of instructor. Course is designed for machinists, lathe operators, mill operators, and grinder operators. More in-depth treatment of working drawings, supplementary views and information, materials and processes commonly found in machining drawings is covered. (30-0) WE

DRF 128 Geometric Tolerancing 2 Sem Hrs
Prerequisite: DRF 120 or permission of instructor. Primary emphasis is on geometric symbols used in place of written notes on industrial drawings including datum, symbols, and other items tolerancing to the geometry of the part. Credit may be earned in either DRF 128 or SKDR 128 but not both. (30-0) WS

DRF 129 Advanced Geometric Tolerancing 2 Sem Hrs
Prerequisite: DRF 128. A continuation of DRF 128, with a more in-depth study of positional tolerance, datums, form tolerance, gaging and verifying principles with advanced applications. (30-0) O

DRF 256 Descriptive Geometry 3 Sem Hrs
Prerequisites: MTH 103 or MT 110, and DRF 107. Emphasizes space visualization and processes of solution. Problems comprise: combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadow, and conics. (15-75)

DRF 257 Advanced Mechanical Design 4 Sem Hrs
Prerequisites: DRF 107, DRF 128, MS 113 or permission of instructor. Focuses on individual and/or team assignments working from complex design layouts to presentation of complete sets of working drawings, including product design, piping design, welding design, and plant layout. Emphasizes the CAD/CAE system, the design process, engineering references, and use of supplier catalogs. (30-90)

DRF 290-299 Special Projects in Drafting O

ECONOMICS COURSES

ECN 221 Principles of Economics I 4 Sem Hrs
The study of how the American economics system works to produce and distribute goods and services given limited resources. The following topics are covered: supply and demand analysis; inflation, unemployment and gross national product; the activities and impact of the consumer, business and government on the economy; interest rates, money and banking; and the business cycle. Credit may be earned in either ECN 111 or 221 but not both. (60-0)

ECN 222 Principles of Economics II 4 Sem Hrs
Prerequisite: ECN 221. A continuation of ECN 221 with emphasis on the individual units in the economy. The following topics are covered: further study of supply and demand; business behavior based on industry structure; regulated business (utilities); international trade and finance; and selected current problems. (60-0)

ECN 268 International Studies in Economics 1-4 Sem Hrs
An analysis of foreign economic systems, including the private-public mix, role of international trade, foreign solutions to common economic problems, and specific timely topics. Includes classroom lectures, individual consultation and international field of study. Expenses for field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take International Studies in the following disciplines: GEO 268, GB 268, SOC 268. (60-0) O

ECN 290-200 Special Projects in Economics O

EDUCATION COURSES

ED 101 Education of the Exceptional Child 3 Sem Hrs
For present or prospective teachers of the non-typical child. Emphasize the characteristics indigenous to the exceptional child. An overview of the educational needs of and approaches to exceptional children will be included to give the students an opportunity to study the various programs offered. (45-0) O

ED 200A Exploratory Teaching (Elementary) 3 Sem Hrs
Prerequisites: ENG 111 & 112 with minimum of C (2.0); minimum of 24 credits with 2.0 gpa; minimum 2 courses from the following with at least a C+ in each: ART 105, ART 113, ED 101, ENG 251, MTH 110, MUS 100, LWT 266, PSY 223. Provides aspiring elementary teachers with experience, study and discussion to enable them to make informed career decisions. Requires at least 90 hours of field work in a elementary school, plus at least 15 hours of seminar. Credit may be earned in ED 100 or ED 200 (A and B), but not in both. (15-90)

ED 200B Exploratory Teaching (Secondary) 3 Sem Hrs
Prerequisite: ENG 111 & 112 with a minimum of C (2.0); minimum of 24 credits with 2.0 gpa; minimum 2 courses in teaching major or minor with at least C+ in each. Provides aspiring secondary teachers with experience, study and discussion to enable them to make informed career decisions. Requires at least 90 hours of field work in a secondary school, plus at least 15 hours of seminar. Credit may be earned in ED 100 or ED 200 (A and B), but not in both. (15-90)

ED 268 International Studies In Education 1-4 Sem Hr
Involves the study of one or more aspects of the educational system of a country other than the United States including class lectures and individual consultation. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. O

ED 290-299 Special Projects in Education O

ED 392 Internet Teaching Techniques for Teachers 2 Sem Hrs
Prerequisite: College junior/senior-level education majors, teachers, or the consent of instructor. Provides those with basic Internet skills the tools and knowledge to create strategies and practices that use Internet tools (e-mail, discussion list, WWW, search engines, chat programs) to enhance student learning. (30-0)

ED 397 Introduction to Distance Learning 3 Sem Hrs
Prerequisites: College junior/senior-level education or communication majors, teachers or consent of the instructor. Teaches strategies for distance education technology, with particular emphasis on instructional design, two-way interactive television (ITV), for application in any field. (45-0)

ED 399 Using Classroom Assessment Techniques 2 Sem Hrs
Prerequisite: Instructor Permission required. Introduces classroom assessment techniques (CAT'S) and their use across disciplines. Develops and applies a variety of CAT's to formatively assess different types of learning and student development. Includes investigation and development of CAT's as tools for classroom research. (30-0)

ELECTRONIC ENGINEERING TECHNOLOGY COURSES

EET 101 Industrial Electricity and Electronics 3 Sem Hrs
Prerequisite: High school algebra or MTH 107. A survey of the fundamentals of electricity and electronics. (30-30) O

EET 102 Electrical Measurements and Technology Careers 2 Sem Hrs
Prerequisite: MTH 107. Must be taken concurrently with EET 120. Introduces students to the EET curriculum. Helps students overcome the barriers to success in the technology area. Includes topics covering the importance of fundamental classes, problem solving skills, ethics in the workplace and school, differences in job titles, and learning styles. Assists students to mechanically make electronic measurements and evaluate based on equipment specification the range of data, and to express their findings in written report form. Credit may be earned in EET 102 or EET 100 and EET 131. (15-45)

EET 103 Passive Circuits 3.5 Sem Hrs
Prerequisites: EET 102, MTH 113, PHY 111, and ENG 111. Must be taken concurrently with EET 104. Studies DC and AC circuit fundamentals, passive components only, including the theory and application of direct current and alternating current concepts. Covers basic circuit laws, magnetism, impedance concepts, and transient analysis, and electrical and physical definitions. Analyzes component behavior based on physics principles. Credit may be earned in EET 103 and 104 or EET 110. (52.5-0)

EET 104 Circuit Analysis 3.5 Sem Hrs
Must be taken concurrently with EET 103. Studies DC and AC circuit fundamentals, passive components only, including independent and dependent sources. Involves network analysis of two and three variable problems. Credit may be earned in EET 103 and 104 or EET 110. (52.5-0)

EET 112 Fundamentals of AC Circuits 4 Sem Hrs
Prerequisites: MTH 111 and EET 111. Presents theory and applications of alternating current electricity including component representation, impedance concepts, fundamental circuit theory applications, introduction to transient analysis, and alternating current instrumentation. (45-30)

EET 120 Digital Circuits 3 Sem Hrs
Prerequisite: MTH 107 or H.S. equivalent. Studies fundamental concepts of digital electronics, including the +5 volt TTL family of integrated circuits, digital number systems, Boolean algebra, Karnaugh maps, combinational logic circuits, counters, latches, flip-flops and shift registers. Introduces basic memory concepts and circuits. (30-30) FW

EET 151 Basic Broadcast Electronics 3 Sem Hrs
Prerequisite: MTH 107 or equivalent. Provides a basic understanding of the technology and equipment in the broadcast field and an insight into the electrical/electronic functions of the equipment students may be required to operate. (45-0) O

EET 208 Active Circuits I with Computer Simulation A 4 Sem Hrs
Prerequisites: EET 103 and EET 104. Must be taken concurrently with EET 209. Studies AC and DC analysis and design of circuitry involving solid state diodes, and bipolar junction transistors. Emphasizes loadlines and computer simulation of the circuits. Credit may be earned in EET 210 and 212 or EET 208 and 209. (60-0)

EET 209 Active Circuits I with Computer Simulation B 4 Sem Hrs
Must be taken concurrently with EET 208. Presents small signal analysis of AC two-part parameters and design of circuitry involving bipolar junction transistors. Emphasizes loadlines, small-signal AC analysis models, and computer simulation of the circuits. Credit may be earned in EET 210 and 212 or EET 208 and 209. (60-0)

EET 211 Active Circuits II 4 Sem Hrs
Prerequisite: MTH 211 or 161, and EET 210. Studies linear integrated circuit theory, frequency response and applications. Emphasizes use of operational amplifiers for math operations, comparators, active filters, analog to digital converters, current and voltage controlled amplifiers, and the use of power boosting techniques. Covers phase locked loops, switching and fixed voltage regulators, integrated timing circuits, and function generators. (60-30)

EET 212 Computer Aided Circuit Analysis and Simulation**2 Sem Hrs**

Prerequisite: EET 210. Examines the use of computers in the solution of electrical circuit problems. Uses software packages MICRO-CAP III and SPICE. Presents both active and passive problems. (15-30)

EET 215 Electronic Controls and Automation**5 Sem Hrs**

Prerequisite: EET 235 or 210. EET 210 can be taken concurrently. Studies industrial control logic design and application with emphasis on ladder logic, relay and T-switch logic formats. Uses Modicon micro 84 to study programmable controller logic. Covers 4-layer semiconductors (SCRS-TRIACS-UJTS-PUTS-DIACS), their characteristics and applications. Studies application of electronic control systems to machine processes with emphasis on transducers, I/O interfaces, control processors and output drivers. (60-30)

EET 216 Advanced Electronic Circuits**4 Sem Hrs**

Prerequisite: EET 210. A continuation of material presented in EET 210 with emphasis on power amplifiers, basic tuned amplifiers, linear integrated circuits, and power suppliers. (45-30) WE (FD Every other year)

EET 222 Advanced Logic Circuits**3 Sem Hrs**

Prerequisite: EET 120. Studies advanced digital design concepts with emphasis on laboratory experience. Includes advanced logic minimization techniques, A to D and D to A conversion, design of sequential circuits and applications, TTL and CMOS interfacing, Hamming Error-checking code, five and six variable Karnaugh Mapping, and Quine-McCluskey reduction techniques, and Fuzzy Logic fundamentals. (30-30) W

EET 226 Computer Electronics**6 Sem Hrs**

Prerequisites: EET 102 and EET 120. Introduces computer electronics with an emphasis on programming microcontroller computers using the C programming language. Teaches students to design projects that combine hardware and software to applications that interface microcontrollers to other computers and to analog and digital circuits. (90-0)

EET 230 Soldering Techniques**1 Sem Hr**

Develops skill in soldering and printed circuit board fabrication and repair, using commonly accepted industrial practices. Covers safety, chemical handling, contamination of work area, grounding, materials, and waste handling. Producing a functioning printed circuit assembly is required. (8-22)

EET 231 Electronic Fabrication**3 Sem Hrs**

Prerequisite: EET 216 concurrently and CAD 114. Basic prototype development from proposal to final report. Include printed circuit board artwork on PC based CAD. Students undertake several class projects as well as propose a project of their own. Students will procure parts, build test, and write final report that covers the specification, operation, and troubleshooting of the unit. (15-60) WE (FD Every other year)

EET 235 Electrical Circuits**3 Sem Hrs**

Prerequisite: MTH 113 and PHY 111 or MTH 121; MT 220 may be taken concurrently. Studies DC and AC circuit fundamentals including a general introduction to industrial control concepts. (30-30)

EET 284 Advanced Industrial Controls Design**5 Sem Hrs**

Prerequisite: EET 215 and CAD 114, or permission of instructor. Builds on principles covered in EET 215 to develop skill in design of complete industrial control systems. Using ladder logic and AutoCAD, students produce computer diagrams and plots of machine control circuits with PLC's, hydraulic and pneumatic components. (45-30) O

EET 290-299 Special Projects in Electronic Engineering Technology O**ENGINEERING COURSES****EGR 100 Careers in Engineering****1 Sem Hr**

A study of Engineering as a profession as well as a career. Surveys the various fields such as Mechanical, Electrical, Civil, etc. Compares an engineer with a technologist. Reviews work responsibilities, ethics, the work environment, challenges, salaries. (15-0)

EGR 101 Engineering Concepts**1 Sem Hr**

A familiarization with the procedures followed and tools used by an engineer in problem solving, analysis and design. Covers engineering languages in graphics, mathematics, and computers. (15-0)

EGR 165 Introduction to Engineering Graphics**4 Sem Hrs**

A study of the graphic language applied to mechanical and civil engineering design. Develops skills in orthographic projection, multi-view drawings, isometric drafting, sectioning, auxiliary views, revolutions, developments, ANSI dimensioning, and tolerancing, annotation and descriptive geometry. Uses computer-aided drafting and analysis. Credit can be earned in EGR 165 or DRF 155 but not in both. (30-60) FW

EGR 166 Engineering Graphics**4 Sem Hrs**

Prerequisite: One year of high school mechanical drafting with final grade of C (2.0) or higher. A study of the graphic language applied to mechanical design, review of multi view and isometric drafting, and the geometry of drawing. Emphasis on developing skills in using orthographic projections, sectional views, auxiliary views and revolutions, dimensioning and annotation, and descriptive geometry. Computer-aided methods in drafting and analysis are used for all topics studied. Students cannot obtain credit for both EGR 165 and EGR 166. (30-60) FW

EGR 170 C++Programming/Engineers**3 Sem Hrs**

Uses the C++ language to introduce program design and development. Develops solutions to computing problems through problem definition, algorithm design, and coding. Includes documentation screen design, and formatting of output. Credit may be earned in only one of the following: CIS 170 or in EGR 170, or CPS 170. (45-0)

EGR 215 Engineering Mechanics, Statics**3 Sem Hrs**

Prerequisites: PHY 211 and MTH 162 (MTH 162 may be taken as a parallel course). Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures, cables, friction, first moments, products of inertia, and centroids. (45-0) O

EGR 216 Engineering Mechanics: Dynamics**3 Sem Hrs**

Prerequisite: PHY 215. Intended as a second course in mechanics for engineers. Covers kinematics and kinetics of particles and rigid bodies in 2D and 3D. Force/acceleration, energy and momentum methods are used. Applications to machine elements and structures in mechanical engineering. (45-0) SD FE

EGR 290-299 Special Projects in Engineering O**EMERGENCY MEDICAL TECHNICIAN COURSES****EMT 101 Basic Emergency Medical Technician I****6 Sem Hrs**

This course covers all the basic techniques in emergency medical care presently considered within the responsibilities of the Basic Emergency Medical Technician (EMT). Includes dispatch, emergency victim care in a variety of situations, extrication, and transportation. (30-120) FE

EMT 102 Basic Emergency Medical Technician Field Experience**1 Sem Hr**

Must be taken concurrently with EMT 101. Provides the opportunity to observe and assist with basic emergency treatment techniques in local emergency service facilities. (0-60) F

EMT 108 Rescue and Extrication 1 Sem Hr
Designed to better prepare the Basic Emergency Medical Technician to cope with automobile rescue in the field. Included is practical experience with a long and short backboard, initial Patient Survey with a simulated, trapped patient, and hands-on experience with various rescue tools and techniques. The National Registry of Emergency Medical Technicians has awarded 10 points in classification 11 -- Extrication course for registration credit. Course is approved by Michigan Department of Public Health, Licensing Division. (2-14) FN

EMT 290-299 Special Projects in Emergency Medical Technician O

ENGLISH COURSES

ENG 100 Introduction to College Reading and Writing 5 Sem Hrs
A prerequisite for ENG 111A and ENG 111 unless initial assessment results permit enrollment in one of these courses. Provides those who are not yet prepared for academic work in the regular composition sequence (ENG 111A, ENG 111, ENG 112) with opportunity to improve their reading and writing skills in an interactive and collaborative setting. Includes practice of personal and academic writing with special attention given to individual needs, which may include organization, sentence structure and variety, correct usage, and vocabulary development. Practices active reading strategies to understand, interpret, and apply information from reading. Successful completion of ENG 100 with a B or better is advisable for students prior to enrolling in the regular composition sequence. (75-0)

ENG 101 Applied English Skills 5 Sem Hrs
Instruction and experience in the skills of reading, writing, and oral communication with emphasis on practical use. This course fulfills the college English requirements for specific technical programs. (75-0) WO

ENG 104 Applied Spelling Techniques 2 Sem Hrs
Emphasizes English spelling patterns and sequences as well as techniques for approaching spelling for adult learners. Shows students how to apply critical thinking strategies to identify and meet their individual spelling needs. (30-0)

ENG 105 English as a Second Language 5 Sem Hrs
Aids the speaker of English as a second language with intermediate and advanced English language skills to communicating in academic and social settings. Includes speaking, listening, reading, composition, non-verbal communication and American culture. (75-0)

ENG 107 Elements of Grammar 2 Sem Hrs
Acquaints or refreshes students with useful, basic grammatical concepts and options in written language. Includes illustration and practice of sentence structure, usage, and punctuation. Strengthens writing skill and language awareness. (30-0)

ENG 108 Effective Reading and Vocabulary Development I 4 Sem Hrs
Designed for those who need to understand, remember, and enjoy what they read. Course will include techniques for understanding new words from reading and remembering vocabulary. Special consideration will be given to the study-reading process for college-level work. (60-0)

ENG 109 Reading and Vocabulary Development II 3 Sem Hrs
Prepares people to better understand and use reading strategies and vocabulary learning techniques. Increases comprehension and flexibility with a variety of printed material, particularly college-level texts. (45-0)

ENG 111 College Composition I 3 Sem Hrs
Develops fluent, effective, and confident writers. Practices the process of composing; generating ideas, shaping and evaluating their writing. Uses reading and language awareness to further the development of their writing. (45-0)

ENG 111A Writing Methods/College Composition I 5 Sem Hrs
Combines the objective of ENG 111 with two additional hours of special attention to particular student problems and needs in the conventions of written composition. Two of the five credit hours may be counted toward the total hours required for graduation but not toward fulfilling the English composition requirement for any curriculum or degree. (75-0)

ENG 112 College Composition II 3 Sem Hrs
Prerequisite: ENG 111. Continues the development of fluent, effective, and confident writers. Expands students' abilities and versatility in reading, language awareness, and composing for a range of purposes, audiences, and situations, including academic research writing. (45-0)

ENG 113 Technical Writing 3 Sem Hrs
Prerequisite: ENG 111. Covers techniques for presentation of technical material in formal and informal reports, letters and other current forms of business and technical communication. Emphasizes general principles used for successful communication experiences in the professional world and the development of thinking and organizational skills, with specific applications to technical courses or professional case studies. (45-0)

ENG 115 Mass Media 3 Sem Hrs
Survey books, newspapers, magazines, recordings, film, radio, television, advertising, public relations and electronics. Includes media history operations, products, current issues and criticisms. (45-0)

ENG 116 News Writing 3 Sem Hrs
Prerequisite: ENG 115 or permission of instructor. Studies fundamental principles of gathering information and writing basic news stories. Emphasizes the elements of news, the lead, Associate Press style, news sources and structures of news stories. (30-30)

ENG 211 Advanced Composition 3 Sem Hrs
Prerequisite: ENG 112 or permission of instructor. Continues to practice forms of academic writing such as the summary, report based upon research, and the analytical essay. Emphasizes writing process and examines the origins and purpose of academic discourse. Approaches may include workshop, conferencing, publication and word processing at the discretion of the instructor. (45-0)

ENG 217 Advanced Reporting 3 Sem Hrs
Prerequisite: ENG 116. Focuses on advanced journalism techniques and news gathering methods, handling specialized assignments in government, crime, courts, sports, business and education plus editorial columns and entertainment reviews. Class members work on *The Delta Collegiate*. (30-30)

ENG 218 News Editing 3 Sem Hrs
Intensive training in publication style, including newspapers, magazines, business and trade press, house organs, news letters and specialized publications; news evaluation, copy editing, headline writing, basic typography, design and computerized layout. Copy reading, headline writing; basic typography; journalistic responsibilities, ethics and communication laws. Class members work on *The Delta Collegiate*. (30-30) O

ENG 253 Creative Writing: Poetry 3 Sem Hrs
Prerequisite: ENG 112. A course in the writing of poetry. Students are encouraged to develop their own poetry writing skills and understanding. In addition to other classroom activities, there are discussions and writing assignments. The instructor may also choose to require analysis of published poetry and criticism. (45-0) FW

ENG 254 Creative Writing: Fiction 3 Sem Hrs
Prerequisite: ENG 112. Focuses on the writing of prose-chiefly short stories. Encourages students to develop their own writing styles. Includes other classroom activities, discussions and writing assignments, requiring analysis and criticisms of other student's work. (45-0)

ENG 256 Creative Writing: Fiction**3 Sem Hrs**

Prerequisite: ENG 112 or permission of instructor. A writing and reading course emphasizing inner exploration as a way of personal growth and expanded awareness. The central focus will be student's journal, although other avenues of personal writing such as dream logs and autobiographies and essays as aids to his/her writing and as works of literary art. (45-0) FW

ENG 290-299 Special Projects in English O**ENVIRONMENTAL SCIENCE COURSES****ENV 100 Environmental Regulations****3 Sem Hrs**

Presents an overview of the regulations that are related to environmental protection, including OSHA regulations, Clean Air Act, SARA, RCRA and similar regulations. Provides an awareness of why the regulations exist, how they are enforced, penalties for noncompliance, and practical experience in interpretation of the regulations. (Cannot be counted toward Natural Science credit.) (45-0) O

ENV 130 Environmental Management for Automotive Industry**1 Sem Hr**

Provides a study of protecting the environment, reducing waste generation, environmental compliance, preventing future liability associated with non-compliance and improper disposal of hazardous wastes, and improving profitability of an operation through pollution prevention techniques and practices. (15-0)

ENV 151 HAZWOPER Training**2.7 Sem Hrs**

Involves hands-on training in the use of personal protective equipment, monitoring and sampling techniques, and decontamination techniques relative to hazardous materials in the workplace. Emphasizes rationale for following specific procedures, evaluations, relative merits of equipment and materials used. Establishes criteria for evaluation of field experience. Meets requirements of 40 hour HAZWOPER training. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted toward Natural Science credit.) (40-0)

ENV 152 Emergency Response to Industrial Spills 1.6 Sem Hrs

Provides mandated training (24 hours) for emergency response to industrial spills, including use of protective equipment, sampling techniques, and decontamination methods. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted toward Natural Science credit.) (24-0)

ENV 153 Confined Space Training**1.3 Sem Hrs**

Provides mandatory training (20 hours) required for confined space entry relative to hazardous materials spills and contamination in the industrial sector. Includes protocols, monitoring methods, types and use of protective gear, and communication methods necessary to protect workers in potentially hazardous confined space. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted towards Natural Science credit.) (20-0)

ENV 154 Hazardous Materials Shipping and Handling**.4 Sem Hrs**

Provides training pertinent to the mandatory protocols for the shipping and handling of hazardous materials, including packaging, labeling documentation, and placarding. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted towards Natural Science credit.) (6-0)

ENV 290-299 Special Projects in Environmental Science O**FASHION MERCHANDISING COURSES****FM 110 Apparel Construction and Analysis****4 Sem Hrs**

Analysis and application of professional procedures in appraising and constructing a garment; use of a pattern; proper fabric selections; pattern layout, marking, cutting, construction, and professional finishes; advanced construction methods in collar applications; sleeve construction and lining techniques. (60-0) F

FM 120 Apparel Tailoring**4 Sem Hrs**

Prerequisite: FM 110 or permission of instructor. Basic clothing construction skills necessary. Areas covered include proper figure measurement and analysis, correct pattern and fabric selection for a coat or suit, pattern alteration techniques, fabric preparations, use of a test muslin, special innergarment construction techniques, construction of lapel collars, set-in sleeves, linings, and special methods of attaching fasteners to garments to achieve professional-looking apparel. (60-0) F

FM 150 History and Dynamics of Fashion**3 Sem Hrs**

An introductory course to the clothing fashion industry. A study of the impact and interrelationships of costume and culture of western civilization from ancient times to the present. Emphasis will be placed on historic designer. The components of fashion, which include line, form, color, texture and silhouette, as well as construction details, will be explored. (45-0) F

FM 151 Display**3 Sem Hrs**

Prerequisite: ART 115 and FM 170 or ID 100, or permission of the instructor. Display, as a major component of sales promotion, is fully explored in this course. Color and basic design principles will be studied in terms of their application to display. Analysis of the function, types and tools of display will be included. Students will design and coordinate window and interior displays. The steps in planning and coordination sales promotions will be covered. Emphasis will be placed on learning how to plan, produce and evaluate effective displays. (45-0) FD WE

FM 155 Textiles**3 Sem Hrs**

A study of natural and man-made fibers, their properties and unique characteristics. Identification of fabrics used in wearing apparel and interior decoration; fabric production, performance and use; final processes and finishes; the study of weaves, pattern and color. (45-0) F

FM 170 Fundamental Theories of Fashion Design and Merchandising**3 Sem Hrs**

A study of fashion merchandising, with emphasis on contemporary designers. A study of primary, secondary, and consumer markets is explored. Includes the relationship of sizes; figure types and styling; fashion pricing and market comparisons; and the forces influencing fashion. (45-0) W

FM 210 Apparel Pattern Drafting and Design**4 Sem Hrs**

Prerequisite: FM 110 or equivalent. Basic principles of pattern drafting; pattern alterations through the flat pattern and pivot methods; elements of a proper garment fit utilizing test muslins; trade information of figure types, sizing, and pattern terminology. The basic sloper will be used in designing and drafting hip length slopers, collars, sleeves, bodices, and skirts. (60-0) W

FM 220 Advanced Apparel Tailoring**4 Sem Hrs**

Prerequisite: FM 120 with a minimum grade of C (2.0). Includes couturier design and construction techniques, constructing a garment from a designer pattern choice utilizing couturier structural and decorative details. (60-0) W

FM 230 Applied Apparel Design**3 Sem Hrs**

Prerequisite: FM 110 or equivalent. This course will cover art techniques suitable for apparel design, including fabric dyeing, quilting, stitchery, applique, and macrame. Apparel will be designed and constructed incorporating the above techniques. (30-30) W

FM 240 Fashion Coordination**3 Sem Hrs**

Prerequisite: FM 170. Fashion coordination responsibilities in the primary, secondary, auxiliary, and retail apparel markets will be explored in this course. Areas that will be covered include sources of fashion information, how it is analyzed, and major fashion accessory to apparel. Practical experience in preparing and giving several types of fashion presentations to live audiences is of major importance. (45-0) W

FM 245 Advanced Textiles**3 Sem Hrs**

Prerequisite: FM 155. An in-depth study of man-made fibers, including flooring materials and other types of floor coverings, giving special consideration to recent developments, new construction techniques and finishes, and measurement and the opportunity for individual investigation and research. (45-0) O

FM 250 Seminar in Clothing Fashion**2 Sem Hrs**

Prerequisite: Permission of the instructor. This course is primarily designed for majors in the fashion curriculum. Students will study the New York fashion market through visits to apparel manufacturers, apparel designers, buyers' showrooms, resident buying offices, advertising agencies, retail ready-to-wear and boutiques, pattern companies, costume museums and other places of interest. Normally the class will spend one week in New York at the beginning of spring semester. Students pay tuition plus all their expenses. (30-0) S

FM 251 Apparel Center Experience**1 Sem Hr**

Prerequisite: Permission of the instructor. Primarily for majors in the Fashion curriculum. Students will study the Chicago apparel industry through visits to apparel manufacturers, buyers' showrooms, resident buying office, area designers, retail ready-to-wear and boutiques, costume museums and other places of interest. Normally, the class will spend 3 days in the market. Students pay tuition plus all their expenses. (0-15) F

FM 290-299 Special Projects in Fashion Merchandising O**FRENCH COURSES****FR 105 Conversational French--Introduction****2 Sem Hrs**

Designed to emphasize the acquisition of oral skills. Successful completion of FR105 and FR106 is considered equivalent to the successful completion of French One. (30-0) O

FR 106 Conversational French--Continuation**2 Sem Hrs**

Prerequisite: FR 105 or equivalent. A continuation of FR 105 with more emphasis on reading and writing French. Successful completion of FR 105 and 106 is considered equivalent to the successful completion of French One. (30-0) O

FR 111 French One**4 Sem Hrs**

A beginning course presenting the basic structure of the French language with drills for correct pronunciation and grammar usage. Emphasis is placed on understanding and using spoken as well as written French. Supplemental work with cassette tapes is expected. (60-0) FW

FR 112 French Two**4 Sem Hrs**

Prerequisite: FR 111 or one year of high school French. A continuation of FR 111 with further development of oral and written skills. (60-0) FW

FR 211 French Three**4 Sem Hrs**

Prerequisite: FR 112 or two years of high school French. Continued application of principles of French grammar by means of conversation and composition practice. Classes conducted as much as possible in French. (60-0) O

FR 212 French Four**4 Sem Hrs**

Prerequisite: FR 211 or three years of high school French. A continuation of FR 211, with further development of oral and written skills. (60-0) O

FR 290-299 Special Projects in French O**FIRE SCIENCE TECHNOLOGY COURSES****FST 101 Introduction to the Fire Service****3 Sem Hrs**

The student will analyze national fire problems, examine fire prevention procedures, identify fire fighters equipment, interpret fire codes and standards, recognize transportation hazards, study wild-fire methods, work with outside fire agencies, identify citizen responsibility, and study future fire problems. (45-0) FE

FST 102 Fireground Tactics**3 Sem Hrs**

Prerequisite: FST 101 or FST 112. Analysis of basic rules of fire fighting strategy, defining engine company responsibilities, determining ladder company functions, correlating MUTUAL AID fires, and general fire problems will be included. (45-0) FE

FST 103 Building Construction**3 Sem Hrs**

Provides a comprehensive look at the methods and practices employed in residential construction as it pertains to fire science. Structural design, blueprints, building materials, and mechanical considerations are covered. (45-0) WE

FST 104 Arson Awareness**3 Sem Hrs**

A comprehensive study of national, state and local arson problems. Examines the local fire department role in reducing arson related fire losses. Examines the duties of and assistance provided by governmental agencies and the private sector. Analyzes local fire statistics to enable the development of an arson data system. Develops effective arson mitigation strategies. (45-0) WE

FST 105 Hazardous Materials/Emergency Responder**3 Sem Hrs**

A comprehensive study of the physical, chemical, and toxicological characteristics of hazardous materials needed to safely and productively address emergency situations that can occur with these substances. (45-0) FE

FST 107 Fire Protection Systems I**3 Sem Hrs**

A comprehensive study of fire protection systems in buildings. Includes design, blueprints, inspection and maintenance of automatic sprinkler systems, standpipe systems, special automatic extinguishing systems, smoke control systems, automatic and manual fire alarm systems, rated fire assemblies and other protection found in structures that help retard the propagation of fire. (45-0) FE

FST 111 Fire Fighter I-A**4 Sem Hrs**

Based on the National Fire Academy curriculum, and adopted by the Michigan Fire Fighters Training Council. Prepares a participant for testing for Fire Fighter I certification, and is a prerequisite to becoming a fire fighter in this state. Skill in the use of standard equipment is demonstrated in the classroom and developed in the field. (66-0) O

FST 112 Fire Fighter I-B**4 Sem Hrs**

Prerequisite: FST 111. Based on the National Fire Academy curriculum, and adopted by the Michigan Fire Fighters Training Council. Prepares a participant for testing for Fire Fighter I certification. Skill development is concentrated on extinguishers, arson detection, inspection, utilities, hazardous materials, among others. (66-0) O

FST 114 Firefighter Safety and Survival**.8 Sem Hrs**

Increases awareness of seriousness of firefighter injury/death problem; identifies firefighter responsibility for reducing injuries and deaths, and provides information to improve safety considerations through all aspects of a company officer's job. (12-0)

FST 115 Managing Company Tactical Operations: Preparing (MCTO:P)**.8 Sem Hrs**

Provides basic foundation for management of one or more companies operating at a structural fire emergency. Focuses on basic concepts: Roles and Responsibility, Readiness, Communication, Building Construction. Fire Behavior and Pre-incident Preparation. (12-0)

FST 116 Building Construction Principles .8 Sem Hrs
Improves student's ability to assess building stability and resistance to fire through an understanding of principles in construction type, alterations, design, and materials that influence a building's reaction to fire. (12-0)

FST 117 Managing Company Tactical Operations: Decision Making (MCTO:D) .8 Sem Hrs
Prerequisite: FST 115. Prepares Fire Officers and Crew Leaders for appropriate response, decision making and tactical operations of one or more companies in structural fire fighting. (12-0)

FST 118 Records and Reports .4 Sem Hrs
Introduces various records and reports the fire officer will encounter: describes and demonstrates selected standard procedures in compiling information and exposes student to methods of writing and presenting reports. (6-0)

FST 120 Fire Service Educational Methodology 1 Sem Hrs
Develops skill in preparing instructional objectives, designing effective lesson plans, developing evaluation instruments, and creating state-of-the-art media. (15-0)

FST 133 Computer Aided Management Emergency Operations 3 Sem Hrs
Emphasizes the use of Computer Aided Management of Emergency Operations (CAMEO), Areal Locations Of Hazardous Atmosphere (ALOHA), and Mapping Applications for Response and Planning of Local Operational tasks (MARPLOT) software. Provides a tool to response teams and first responders to manage emergency planning and response and regulatory compliance of hazardous material incidents. (45-0)

FST 200 Fire Officer II 3 Sem Hrs
Examines the critical elements of pre-incident preparation, situation assessment, and decision making for structural firefighting and rescue operations. Includes building construction, fire investigations, fire inspections, and supervision policies. (45-0)

FST 202 Company Management 3 Sem Hrs
Prerequisite: FST 102 or FST 112. A comprehensive study of managing a fire company. Based on an understanding of principles of organization, organizational structures, communications, and group dynamics. Includes planning, organizing, implementing, evaluating, goal-setting, problem solving, and career counseling. (45-0) WE

FST 203 Fireground Management 3 Sem Hrs
Prerequisite: FST 102 or FST 112. A comprehensive study of the roles of the Fireground commander including positioning the command post, equipment, and personnel on the scene, strategies for staging and sectoring operations along with command procedures and maintaining communications on the Fireground. (45-0) WE (Every other year)

FST 204 Fire Service Instructional Methodology 3 Sem Hrs
The student will have an opportunity to learn how to effectively organize and teach a lesson or course following the criteria in NFPA's Fire Service Instructional Professional Qualifications Level I (1976). (45-0) SE (Every other year)

FST 205 Hazardous Materials/Emergency Operations 3 Sem Hrs
Prerequisite: FST 105. A comprehensive study of chemical transportation containers, emergency response equipment, and emergency response procedures needed to safely and productively address emergency situations that can occur with hazardous materials. (45-0) O

FST 206 Confined Space Management & Rescue 4 Sem Hrs
Provides participants with the knowledge and skills to minimize or eliminate hazards associated with entry into a permit required confined space. Focuses on OSHA 29 CFR 1910.146 and Michigan Department of Commerce and Industrial Services 325.3001 standards regulation the roles of entry supervisor, entrant, attendant and rescuer. Includes non-permit confined spaces hazards and entry conditions. Includes a hands-on entry and rescue simulation workshop. (45-15)

FST 207 Fire Protection Systems II 3 Sem Hrs
Prerequisite: FST 107. A comprehensive study of fire protection system in buildings. Includes design standards, conducting plan review, inspection, testing and maintenance of fire alarms, automatic detection devices, manual devices, automatic sprinklers, foam-water, water spray, standpipe, water supply and automatic chemical agent systems. (45-0)

FST 211 Fire Fighter II-C 4 Sem Hrs
Prerequisite: FST 112. Based on the National Fire Academy curriculum, and adopted by the Michigan Fire Fighters Training Council. Prepares a participant for testing for Fire Fighter II certification. Advanced skills are developed in the use of standard equipment such as breathing apparatus, ladders, hoses, and in salvage, forcible entry, and others. (66-0) O

FST 212 Fire Fighters II-D 4 Sem Hrs
Prerequisite: FST 211. Based on the National Fire Academy curriculum, and adopted by the Michigan Fire Fighters Training Council. Prepares a participant for testing for Fire Fighter II certification. Advanced skills are developed in ventilation, rescue, building construction, aircraft fires, hazardous materials, and others. (66-0) O

FST 213 Managing Company Tactical Operations: Tactics (MCTO:T) .8 Sem Hrs
Prerequisite: FST 117. Examines rescue and ventilation, confinement and extinguishment, water supply, exposures and defensive operations, and salvage, overhaul, and support. Concludes with a major fire simulation activity. (12-0)

FST 214 Arson Detection for the First Responder .8 Sem Hrs
Provides clear definition of the role of initial responder organizations, and essential knowledge to enable them to recognize the potential of an intentionally set fire, preserve evidence, and properly report the information to appropriate officials. (12-0)

FST 215 Conducting Basic Fire Prevention Inspections (CBPI) .8 Sem Hrs
Advances professional development of fire service personnel in conducting basic fire prevention inspections. Includes code enforcement, inspection techniques, common and special hazards, and sprinkler and signaling devices. (12-0)

FST 216 Building Construction Non-Combustible/Fire Resistive .8 Sem Hrs
Improves ability of students to assess building stability and resistance to fire while improving operational effectiveness. Includes structural material, principles of fire growth, smoke movement and special problems. (12-0)

FST 217 Fire Service Supervision: Personal Effectiveness .8 Sem Hrs
Presents current research on management, leadership, stress, and time management and shows how to adapt information presented to personal specific management context. (12-0)

FST 218 Fire Service Supervision: Team Effectiveness .8 Sem Hrs
Demonstrates how communication, motivation, counseling, and the principles of conflicts resolution and group dynamics may be used to promote efficient group functioning and member satisfaction. (12-0)

FST 224 Fire Investigation 3 Sem Hrs
An in-depth basic course which defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin and fire cause, both accidental and incendiary, motivation of the fire setter, fire scene investigation, evidence collection, photography, follow-up investigation and court presentation. (45-0) WE

FST 230 Fire Safety Education 3 Sem Hrs
A comprehensive study of national state and local fire safety education program strategies. Implementation of the five step planning process at the local level. Development of skills necessary to organize, plan and use sound management of financial, material, and human resources to reach designated goals and objectives, to address the demonstrated fire safety education needs of the local community. (45-0) SE (Every other year)

FST 231 Fire Service Law 3 Sem Hrs
Basic introduction to the legal considerations that can affect the professional lives of members of the fire service, fire service-related occupations, and those who aspire to careers in the fire service. (45-0) SE (Every other year)

FST 240 Internship in Fire Science 2 Sem Hrs
Prerequisite: Minimum 15 credits in Fire Science courses and faculty permission. Provides the opportunity to observe and practice technical applications in the field. (0-100)

FST 290-299 Special Projects in Fire Science Technology O

FST 300 Fire Officer III 3 Sem Hrs
Provides basic leadership skills for personal, company and supervisory success. Includes health and safety risk management, program implementation, and incident management system. (45-0)

FST 301 Incident Command System 1 Sem Hr
Focuses on the fire officer's and manager's responsibilities to use, deploy, implement, and/or function within a department Incident Command System. (15-0)

FST 302 Leadership I Strategies for Company Success 1 Sem Hr
Presents the student with the basic leadership skills and tools needed to perform effectively in the fire service environment. Includes techniques and approaches to problem solving ways to identify and assess the needs of the company officer's subordinates, methods for running meetings effectively, and decision-making skills. (15-0)

FST 303 Leadership II Strategies for Personal Success 1 Sem Hr
Provides the student with the basic leadership skills and tools needed to perform effectively in the fire service environment. Includes ethics, use and abuse of power, creativity, and management of the multiple roles of a leader. (15-0)

FST 304 Leadership III Strategies for Supervisory Success 1 Sem Hr
Provides the student with the various leadership skills and tools to perform effectively in the fire service environment. Includes delegation to subordinates, assessment of personal leadership styles through situational leadership, discipline, coaching and motivating techniques. (15-0)

FST 305 Firefighter Health and Safety: Program Implementation & Management 1 Sem Hr
Focuses on the problem of firefighter health and safety, and the design and implementation of a departmental safety program. Includes command issues, policies, and programs addressing health and safety in emergency situations. (15-0)

FST 306 Shaping the Future 1 Sem Hr
Focuses on the skills and techniques that a mid-level manager needs to provide leadership and direction in the fire service. Includes discussions on the use of environmental scanning as a tool, the concepts of paradigm shifts, and methods to reframe problems accurately. (15-0)

FST 307 Incident Safety Officer 1 Sem Hr
Focuses on the increasing awareness to a wide variety of emergency situations. Teaches what a safety officer at an incident needs to know using scenarios to convey instructional points. (15-0)

FST 308 Health and Safety Officer 1 Sem Hr
Examines the role of the Health and Safety Officer in policy and procedure issues that effect the health and safety of emergency responders; emphasizes risk analysis, wellness, program management, and other occupational safety issues. (15-0)

FST 332 Advanced Fire Administration 3 Sem Hrs
Examines the organization and management of the fire service. Discusses new technologies, deployment of resources available, personnel and equipment costs, municipal fire protection planning, statistics and reporting systems, training and finances. (45-0)

FST 334 Fire Prevention Organization & Management 4 Sem Hrs
Presents an overview of history, philosophy, techniques, procedures, programs of private and public agencies involved with fire prevention, organization and administration of code enforcement, licenses, permits, zoning, inspections, investigations, education and analysis of statistics. Includes off site field trips. (45-15)

FST 338 Contemporary Issues In The Fire Service 3 Sem Hrs
Examines issues having impact on the fire service to include past, present and future concerns and trends. Discusses current political, policies, practices, deployment and events within the fire service and related professions and technologies. (45-0)

GRAPHIC ARTS TECHNOLOGY COURSES

GAT 100 Introduction to Graphic Arts 3 Sem Hrs
Provides overview of methods used in Printing, from pre-press through distribution of the finished product, as well as the wide variety of career possibilities. (45-0)

GAT 113 Pre-Production Graphic/Film Assembly 6 Sem Hrs
Prerequisite: GAT 100. Teaches use of process camera, darkroom procedures. Single-and four-color image assembly, proofing and quality control procedures. Credit may be earned in GAT 113 or in GAT 110 and 112, but not both. (90-0)

GAT 222 Pagemaker I 3 Sem Hrs
Prerequisite: GAT 110, OSE 170, GAT 112 or concurrently. Advances student from creating pages conventionally on a light table into computer-generated page make-up. Begins with MacIntosh basics, concentrates on building skills using Aldus PageMaker, and ends with an introduction to QuarkXPress software. Credit may be earned in GAT 222 or ART 272 but not both. (45-0)

GAT 224 QuarkXPress I 3 Sem Hrs
Prerequisite: GAT 222 or Art 273. Advances students from creating computer-generated pages in Pagemaker to QuarkXPress. Introduces the major differences between the two, highlights QuarkXPress, and how it relates to the printing industry today. Continues to build high-level skills using QuarkXPress' QuarkEd training guides. Credit may be earned in GAT 224 or in ART 276 but not in both. (45-0)

GAT 226 Illustrator 3 Sem Hrs
Prerequisite: GAT 224 or ART 276. Presents the use of Illustrator software including design and technical aspects, and the relationship to other graphic applications in the printing industry. Credit may be earned in GAT 226 or in ART 277 but not in both. (45-0)

GAT 230 Computer Graphics 3 Sem Hrs
Prerequisites: GAT 226 or ART 271. Builds on previous Macintosh computer software and application skills to solve specific design problems. Uses combinations of several application software programs (drawing, painting, three-dimension) to achieve multiple effects with type and images on/for the printed page. Credit may be earned in GAT 230 or in ART 275 but not in both. (45-0)

GAT 231 Electronic Pre-Press 3 Sem Hrs
Prerequisites: GAT 222 or ART 273, GAT 224 or ART 276, GAT 226 or ART 277, and GAT 230 or ART 275. Covers all aspects of preparing computer design work for the printer from start to finish. Credit may be earned in GAT 231 or in ART 278 but not in both. (45-0)

GAT 240 Offset Press Fundamentals I 3 Sem Hrs
Prerequisite: GAT 110. Provides students basic working knowledge of the small offset press: safety features, offset press configuration, plate making, inks, and press work. (22.5-22.5)

GAT 242 Sheet Fed Offset Press Fundamentals II 3 Sem Hrs
Prerequisite: GAT 240. Presents additional study and hands-on application of sheet-fed offset press work. (45-0)

GAT 290-299 Special Projects in Graphic Arts Technology

GENERAL BUSINESS COURSES

GB 103 Basic Finance & Money Management 3 Sem Hrs
The basics of budgeting, money management, credit and buying, the intricacies of owning property, income tax, investments, insurance, wills and trusts. (45-0) O

GB 110 Business Mathematics 3 Sem Hrs
Prerequisite: MTH 100 if mathematics placement test score unsatisfactory. Covers principles necessary for an understanding of math of the business world. Includes various methods of computing interest and bank discounts; installment buying; F.I.C.A. Federal Income Taxes and other payroll deductions; markup, cost and selling prices; various wage payment systems; sales and property taxes; insurance; measures of central tendency; and an introduction to the metric system. (45-0)

GB 120 Introduction to Fast Food/Family Dining Management 3 Sem Hrs
Overview of the fast food industry; past, present, and future. Compares and contrasts various fast food restaurant concepts using case histories of successful and unsuccessful companies in the industry. Includes the organization and impact of franchise and independent fast food restaurant; types of jobs and career opportunities; food purchasing, receiving, handling, and storage. (45-0) O

GB 121 Management of Fast Food/Family Dining Establishments 3 Sem Hrs
Prerequisite: GB 110 and GB 120. Includes types and uses of common financial records; personnel planning and scheduling; marketing, promotion, and advertising; training and supervising specifically related to the fast food/family dining industry, evaluating employees; safety and health labor laws; wage and fringe benefit compensation; management of human resources; working with co-workers. (45-0) O

GB 131 Small Business Management I 3 Sem Hrs
Overview of small business, what is necessary to start a small business, including: small business in free enterprise, the entrepreneur, opportunities and trends, business plan, legal aspects, location, financing, organizational planning and marketing. Helpful to those who are currently operating a small business. Case studies will be used throughout the course. (45-0)

GB 131A Starting a Business .5 Sem Hrs
Identifies rewards and drawbacks of small business entrepreneurship. Discusses readiness, trends, possible causes of failure, forces that influence whether an idea is a good investment opportunity as well as the pros and cons of buying an existing business. (7.5-0)

GB 131B Evaluating a Business .5 Sem Hrs
Discusses the forces that determine the nature and degree of competition within the small business industry, the concept of niche marketing, the pros and cons of buying a franchise, and trends in franchising. Identifies the benefits and drawbacks of becoming a franchisor as well as recognizing the importance of customer service. (7.5-0)

GB 131C Developing a Business Plan .5 Sem Hrs
Discusses how to prepare a business plan for small businesses. Identifies features that appeal to investors. (7.5-0)

GB 131D Developing a Market Plan .5 Sem Hrs
Identifies core marketing activities, product strategies and advertising options for the small business. Discusses how marketing potential is determined, concepts of human behavior and developing a promotional mix. (7.5-0)

GB 131E Financial and Risk Management .5 Sem Hrs
Identifies sources of funds for small businesses, types of insurance coverage and how to forecast a new venture's profitability. How to analyze financial requirements and methods of coping with business risks. (7.5-0)

GB 131F Legal Considerations--Ownership and Staffing .5 Sem Hrs
Identifies common forms of organization for small businesses, factors to consider in choosing between different forms of business, and the steps in evaluating job applicants. Explains how different forms of ownership are taxed. (7.5-0)

GB 132 Small Business Management II 3 Sem Hrs
Strengthens the entrepreneurial and management skills of those who are already in (or who may enter) business for themselves. Small business case studies are used extensively. (45-0) W

GB 143 Principles of Advertising 3 Sem Hrs
Provides a broad view of advertising from the marketing and consumer point of view. Historical background, economic and social aspects, roles of advertising, advertising stages, target marketing, media, using selected behavioral science information in advertising, and obtaining proper advertising appeal are included. (45-0)

GB 145 Principles of Sales 3 Sem Hrs
Emphasizes the marketing concept and the importance of personal selling for those engaged in the marketing of products, services or ideas. Includes an analysis of the steps in a sales proposal. Classroom presentations by students required. (45-0)

GB 153 Introduction to Business 3 Sem Hrs
Clarifies the role of business in modern society both domestic and international. Includes an overview of the American business environment, forms of business ownership, obtaining and managing financial resources, management of organizations and human resources, and current issues in the free enterprise system. (45-0)

GB 155 Current Business Issues I 1 Sem Hr
Pursues the current happenings in business by analyzing the impact of current issues on business. Students will be expected to read and utilize current business periodicals. (15-0) O

GB 156 Current Business Issues II 1 Sem Hr
Pursues the current happenings in business by analyzing the impact of current issues on business. Students will be expected to read and utilize current business periodicals. (15-0) O

GB 158 Public Relations 3 Sem Hrs
Covers the basic principles of the role of public relations in society, public relations principles and their application, procedures for planning and implementing public relations campaigns, plus the identification of "publics" and the strategies for influencing them. (45-0) O

GB 173 Residential Appraising 2 Sem Hrs
Designed primarily for lending personnel in financial institutions, as well as for appraisers seeking professional designation. Students will be introduced to principles of single family appraising, and by applied examples understand: (1) nature, purpose and approach to appraising, (2) methods of neighborhood and site analysis. (30-0) O

GB 181 Family Law 3 Sem Hrs
A study of the marriage relationship, divorce, separation agreements, name changes, as well as laws governing custody, legitimacy, adoption, guardianship and support of the children. (45-0) O

GB 182 Probate Law 3 Sem Hrs
A study of trusts and estates, probate administration, life insurance and estate planning, with specific emphasis on wills. (45-0) O

GB 191 Quality Teamwork**1 Sem Hr**

Designed to build the students ability to respond to the needs of groups as a team member and a team leader. Studies team structures, roles of team members, and tools used in facilitating teams that contribute to organizational quality. Opportunities to model effective team operations will be provided. Credit may be earned in either QA 191 or GB 191 but not in both. (15-0) O

GB 203 Business Ethics**3 Sem Hrs**

A study of basic ethical concepts such as dignity, privacy, manipulation and rights and serves as a foundation for analysis of ethical conflict situations arising specifically in a business environment. Designed to reinforce the ability to make cogent, well-reasoned decisions in the context of ethical dilemmas surrounding such topics as advertising, consumer rights, employee motivation, loyalty, whistle blowing, and the environment. Credit may be earned in GB 203 or PHL 203 but not in both. (45-0) O

GB 204 American Business History**2 Sem Hrs**

Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, the anti-trust movement and the effects of the Depression and New Deal on business. This course may also be taken as HIS 204. Students receiving credit in this course cannot receive credit of GB 205, HIS 204 or 205. (30-0) W

GB 205 American Business History**3 Sem Hrs**

Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political, and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, and anti-trust movement, and the effects of the Depression and New Deal on business. The students will be required to complete a major paper or project. This course may also be taken as HIS 205. Students receiving credit in this course cannot receive credit for GB 204 or HIS 204 or 205. (45-0) W

GB 212 Food Service Sanitation**3 Sem Hrs**

Designed for food service managers, supervisors, owners and those aspiring to management jobs in the industry. A study of food service sanitation, state public health and food service regulations and training of food service personnel. This course is a prerequisite for those wishing to be certified by the State of Michigan Department of Public Health and NIFI (National Institute of the Food Service Industries) as a food service manager. (45-0) O

GB 231 Industrial Relations**3 Sem Hrs**

Prerequisite: GB 153, or MFG 111 and IS 110, or permission of instructor. Provides a study of the human factor in industry. Problems of wages, hours, unemployment, working conditions; federal and state laws which relate to labor and management relations; policies and practices of unions and management. (45-0) O

GB 232 Case Studies in Labor Relations**3 Sem Hrs**

Prerequisite: GB 231 or permission of instructor. Application of principles of industrial relations to collective bargaining case studies. Actual cases are discussed and evaluated in reference to current labor laws and personnel practices. (45-0) O

GB 243 Principles of Marketing**3 Sem Hrs**

Prerequisite: GB 153. Provides an understanding and interpretation of the marketing system and its importance in the economy and the place of the marketing function in business management. The marketing framework is established and a basic understanding of the psychological, environmental and managerial functions and processes that are employed in contemporary marketing are presented. (45-0)

GB 245 Principles of Management**3 Sem Hrs**

Prerequisite: GB 153 or permission of the instructor. Theories of management practices will be discussed and fundamentals of administrative, executive, and staff management explained. Emphasis is placed on discussion of the management functions of planning, organizing, directing, controlling, as well as preparation of information required for decision making. The analysis of management problems and the synthesis of solutions will be covered. (45-0) A

GB 246 Supervision**3 Sem Hrs**

A review of the main management concepts, and a discussion of what a supervisor is and does. Emphasis placed on what makes an effective, efficient supervisor; techniques used by supervisors in problem solving will also be discussed. Leadership, time management, hiring, evaluation, discipline, and health and safety will be presented. Role plays will be utilized. (45-0) O

GB 247 Principles of Retailing**3 Sem Hrs**

Prerequisite: GB 153 or permission of the instructor. Store location, organization structure, and retail personnel management are discussed in detail. Merchandising policies and budgets, and buying and pricing merchandise are presented. Retail advertising, personal selling, customer services, and loss prevention are also presented in some detail. The scope of the retailing industry, requirement of retail management as well as careers in retailing are discussed in the course. (45-0) FW

GB 248 Principles of Buying for Resale**3 Sem Hrs**

Prerequisite: GB 247 or permission of instructor. The buying function in retailing and wholesaling will be explored in depth. The principles of foreign and domestic vendor location and the legality and ethics in the buyer-vendor relationship are covered. The factors determining merchandise selection, including consumer analysis, building model stocks, and estimating sales potential will be studied. Merchandising expense control factors, manual and computer inventory control systems, as they relate to buying, will be studied. (45-0) EO

GB 251 Business Law I**3 Sem Hrs**

This course provides a comprehensive study of both state and federal court systems, and the relationships of the participants in a lawsuit, including judges, juries, litigants, witnesses and attorneys. Particular areas of business law that are studied in the context noted above include tort law, contract law, agency law, and the law of personal property and bailments. (45-0)

GB 252 Business Law II**3 Sem Hrs**

Prerequisite: GB 251 or permission of instructor. This course provides a continued study of court systems, with emphasis in specialized areas of business law including sales law, commercial paper law, secured transactions and bankruptcy law, real property law and corporation law. The Uniform Commercial Code and recent consumer protection legislation are stressed. (45-0)

GB 253 Applied Marketing Strategies**3 Sem Hrs**

Prerequisite: GB 243 or permission of instructor. Students make strategic marketing decisions, using cases from manufacturing, service and retail industries. Topics include: situation analysis, segmentation, positioning, market research and information systems, international marketing, and product, price, distribution and promotion strategies. Students will be introduced to the development and implementation of the marketing plan and budget. (45-0) WE

GB 256 Human Resources Management I**3 Sem Hrs**

Prerequisite: GB 153 or permission of instructor. Development of human resources management; the environment in which human resources management must operate; contemporary legal guidelines; human resource planning and recruitment; developing effectiveness in human resources through training, development, and appraisal; and creating a productive work environment through motivation, communication, leading and directing. (45-0)

GB 257 Human Resources Management II 3 Sem Hrs
Prerequisite: GB 256 or permission of instructor. The fostering of employee-management relationships; dynamics of labor relations; collective bargaining; disciplinary action; compensation management; incentive compensation; employee benefits; safety and health; auditing the Human Resources Management program; and international Human Resources Management will be covered. (45-0) O

GB 260 Human Relations in Management 3 Sem Hrs
Prerequisite: GB 256 or permission of instructor. Covers personnel problems that managers and supervisors are likely to encounter on a frequent basis; a logical approach to solving personnel problems; motivational methods, leadership techniques; concepts of organization and organizational climate; factors affecting employee morale; dynamics of change; effective utilization of under-represented groups of employees; problems of alcohol and drug usage and changing nature of work and workers. (45-0) O

GB 265 International Business 3 Sem Hrs
Prerequisite: GB 153 or permission of instructor. An examination of the three environments within which the typical business person must function in a global economy: domestic, foreign and international. The international organizations (i.e., GATT, IMF, OPEC, EC and the UN) and the international monetary system will be covered. Physical, sociocultural, political, legal, labor and financial forces in global markets will be analyzed. Case studies will be used to emphasize management decision making in marketing, production, financing and staffing in worldwide companies. (45-0) W

GB 268 International Studies in Business 1-4 Sem Hrs
An analysis of foreign business including its: service industries; approaches to marketing and advertising; facilities for mass transportation; impacts of trading unions such as the European Economic Community and other elements of foreign and international trade. Includes field study, classroom lectures, and individual consultation with the faculty sponsor. Expenses for field study must be paid by the student. By prior arrangement with appropriate faculty, students may also take International Studies in the following disciplines: GEO 268, ECN 268, SOC 268. (60-0) O

GB 274 Computer Aided Decisions 2 Sem Hrs
Prerequisites: CIS-133 and GB 243 or GB 245. Practices the strategic decision making process in management/marketing within an interactive business simulation class using the IBM or compatible microcomputer. Explores the use of microcomputer application software in the area of decision support. Topics include modeling, simulation, query, languages, spreadsheets, and expert systems. Presents strategic decision situations to illustrate techniques utilized for unstructured decision making in the business environment. (30-0)

GB 290-299 Projects in General Business O

GE 211 German Three 4 Sem Hrs
Prerequisite: GE 112 or two years of high school German. Continued emphasis is placed on proper pronunciation habits and on application of basic grammatical structures of modern spoken and written German by means of oral exercises, conversations, reading of German prose, and written exercises. As much as possible, this class is conducted in German. (60-0) O

GE 212 German Four 4 Sem Hrs
Prerequisite: GE 211 or equivalent. A continuation of GE 211 with emphasis on conversation and composition. (60-0) O

GE 290-299 Special Projects in German O

GEOGRAPHY COURSES

GEO 103 Introduction to Meteorology 3 Sem Hrs
Provides study of the fundamentals of weather including underlying physical processes of the atmosphere, air masses and general circulation. Develops weather map understanding and analysis, forecasting, and weather measurement and instrumentation. (45-0)

GEO 105 Human Geography 4 Sem Hrs
Study focuses on the aspect of geography concerned with "man's" utilization of an impact upon the natural environment. Included are population distribution and growth, settlement forms, utilization and conservation of natural resources, the impact of technology on human occupancy of the earth, man's role in modifying the earth's surface and the origin and spread of cultural elements. (60-0) O

GEO 111 Physical Geography 4 Sem Hrs
Study of the natural environment which is important to people and their activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials, land forms; drainage; and major natural resources. Introduction to weather and climate, soils and vegetation -- their character, causes, significance and distribution. (45-30)

GEO 113 World Cultural Geography 4 Sem Hrs
Essential geographic characteristics and concepts of selected cultural regions of the world. These regions will be compared and contrasted in terms of their present and potential development. Examples will be selected from both the western and non-western world. (60-0) FW

GEO 150 Natural Regions of the United States and Canada 3 Sem Hrs
Study focuses on an examination of the face of our land. Each region is analyzed in terms of the initial and sequential earth processes that have forged its structure as well as the climatic, vegetation, and soil patterns that give character to its landscape. Includes natural resources and environmental problems characteristic of each region. Many national parks and monuments will be examined. Topographic maps and air photographs will be used as tools for landscape analysis. (45-0) O

GEO 211 Economic Geography 4 Sem Hrs
A survey of locational economic patterns and their interrelationships. Included are: energy production, manufacturing, transportation, etc. Special emphasis will be placed upon the study of social and spatial variation in urban-rural land use problems and analysis related to above, particularly those in the local and state area. (60-0) O

GEO 222 Geography of Asia 3 Sem Hrs
Regional geographic interpretation of the area as a continent. Study of relationships of physical, economic, social and political environment activity. (45-0) O

GEO 223 Geography of Europe 3 Sem Hrs
Similar to Geography 222 but applied to Europe. (45-0) O

GERMAN COURSES

GE 104 Speaking German 2 Sem Hrs
The student will learn a number of simple, everyday expressions in German. Intensive practice of comments-inquiries-responses about name, age, nationality, family, work, etc. Expressions useful in hotels, restaurants, stores, transport systems as well as in meeting people, will be included. The basics of the German writing system will be introduced. (30-0) O

GE 111 German One 4 Sem Hrs
Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written German by means of oral practice, reading or simple texts, and written exercises. (60-0) FW

GE 112 German Two 4 Sem Hrs
Prerequisite: GE 111 or one year of high school German. A continuation of GE 111. (60-0) O

GEO 226 Geography of United States and Canada 3 Sem Hrs
Similar to Geography 222 but applied to the United States and Canada. (45-0) O

GEO 255 Third World Development 4 Sem Hrs
An interdisciplinary description and analysis of processes and conditions which created and maintain the "Third World." Population, physical environment, historical, political, social and economic factors will be addressed. Current concepts and development theories will be explored and applied. Credit may be earned in GEO 265 or SOC 265 but not in both. (60-0) O

GEOGRAPHY COURSES 260-269

These courses usually involve classroom work on the Delta campus followed by a field trip ranging in length from three days to several weeks. Prior to registration, students must make field trip financial arrangements with the instructor.

GEO 260 Geography of the Pacific Islands 3 Sem Hrs
Prerequisite: Permission of the instructor. A regional geographic interpretation of the Pacific Islands emphasizing their physical, environmental and cultural patterns, and their economic development. Study will focus on three subregions: Polynesia, Melanesia and Micronesia. Field work in the Pacific Islands will be required. Students must pay own expenses. (45-0) S

GEO 261 Geography of Caves & Karst Topography 1 Sem Hr
Study focuses on the role of solution in forming caves and in landscape formation (karst topography). Formation of stalactites, stalagmites, flowstones and other crystal formations are also studied. Students are required to participate in weekend field trip to Mammoth Cave National Park, Kentucky. Students must pay own expenses. (15-0) O

GEO 262 The Geography of the Canadian Shield 1 Sem Hr
Focuses on the interrelationships between humans and the physical environment of this, the largest of the landform provinces of Canada. Major topics include the physical environment, natural resources, recreation, and settlement patterns. Required classroom work, travel and field research will help the students to develop their understanding of this wilderness area. Student must pay own expenses for field trip. (15-0) FS

GEO 263 The Geography of Appalachia 1 Sem Hr
Focuses on the economic, social and environmental impact of coal mining on the region of Appalachia. Topics include: shaft, strip and drift mining, reclamation of strip mined lands, the relationship between mine workers and the people of Appalachia, and preservation of threatened natural areas. A weekend field trip is required. Students must pay own expenses. (15-0) O

GEO 264 The Geography of the Western United States and Canada 4 Sem Hr
Focuses on the physical, cultural, and historical geography of those regions west of the 100th meridian of longitude in the United States and Canada. Regions to be covered include the Great Plains, Rocky Mountains, the Colorado and Columbia Plateaus, the Basin and Range Province, and the Pacific Coast mountains and basins. Classroom work, plus required travel and field research will develop a first-hand understanding of these areas. Students must pay own expenses for field trip. (60-0) O

GEO 266 Geography of New England 4 Sem Hrs
Focuses on both the physical and historical geography of New England. Study areas include Cape Cod, the Boston area, the White Mountains, the Maine coastline and Acadia National Park. The students will study the development of the New England landscape through cultural sequencing, viewing the present as a mosaic of past landscapes. Artifact landscapes will be examined from the American Indian, Colonial Industrial Revolution, maturing economy, and modern eras. Field study, in addition to classroom work is required and must be paid for by the students. (60-0) O

GEO 267 Geography of Continental Glaciation 1 Sem Hr
Reviews the causes and consequences of continental glaciation. Topics include climatic change, past and present distribution of continental glaciers and landscape features formed by glaciation. The possibility of the world entering another "Ice Age", will also be discussed along with what social modifications might be necessary if this should happen. Field work in a glaciated area will be included. Students must pay own expenses. (15-0) O

GEO 268 International Studies in Geography 1-4 Sem Hrs
A geographic interpretation of selected world regions emphasizing their physical environments, cultural patterns and economic development. Includes class lectures, individual consultation and international field study. Expenses for the field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take international studies in the following disciplines: SOC 268, ECN 268, GB 268. (60-0) O

GEO 269 Geography of Florida 3 Sem Hrs
Focuses on both the physical and cultural geography of Florida. Study areas include the Florida karst landscapes, the Everglades, barrier islands and coral reefs. Students will also investigate citrus and winter vegetable growing, livestock raising, phosphate mining, and the recreational-retirement industry. Various environmental impact problems will be discussed. Field study in addition to classroom work is required and must be paid for by the students. (45-0) O

GEO 270 Energy for the Future 1 Sem Hr
An examination of a variety of alternative energy technologies, including solar, wind, wood, biologically derived liquid fuels, geothermal energy, etc., that may greatly change our patterns of energy procurement by the year 2000 A.D. Weekend field work is required. Students must pay own expenses. (15-0) S

GEO 271 Michigan Energy Resources 1 Sem Hr
An examination of Michigan's primary energy resources including production and demand for oil, natural gas, and nuclear power. Potential environmental impacts will also be discussed. Weekend field work is required. Students must pay own expenses. (15-0) S

GEO 272 Geography of Kentucky 1 Sem Hr
A regional geographic interpretation of the state of Kentucky, emphasizing its physical, cultural, economic, and historical patterns. Classroom work, travel and field research in Kentucky are required. The student must pay own expenses. (30-0)

GEO 274 Geography of West Virginia 2 Sem Hrs
A regional geographic interpretation of the state of West Virginia, emphasizing its physical, cultural, economic and historic patterns. Classroom work, travel and field research in West Virginia are required. Students must pay own expenses. (30-0)

GEO 275 Geography of the Pacific Northwest 3 Sem Hrs
A regional geographic interpretation of the states of Washington and Oregon, emphasizing their physical, cultural, economic and historical patterns. Classroom work, travel to the field research in the area are required. The student must pay own expenses. (45-0)

GEO 290-299 Special Projects in Geography

GEOLOGY COURSES

GLG 102 Volcanoes and Earthquakes 1 Sem Hr
A study of the internal dynamics of the earth. Major topics will include: catastrophic events in historic times, products of vulcanism, volcanic rocks, vulcanism and geothermal energy, relationship to earthquakes and volcanoes to plate tectonics, interpretation of earthquake records, man-made earthquakes, earthquake prediction and control. (15-0) O

GLG 103 Life on Other Worlds??? 1 Sem Hr
An introduction to the origin of life on earth; the nature and characteristics of life, as we know it. An analysis of the chances for life occurring on other worlds in space such as Mars, Jupiter or other planets. A discussion of UFOs and their bearing on the possibility of intelligent life elsewhere in the Galaxy; our attempts to communicate with intelligent life other than ourselves. (15-0) O

GLG 111 Physical Geology 4 Sem Hrs
Study of the overall structure of the earth and the rocks which form the crust. An introduction to the processes of erosion and weathering caused by the work of natural agents such as water and ice. Discussion of Plate Tectonic Theory and implications. Laboratory study of common rocks, minerals and selected fossils. Field trips optional. (45-30)

GLG 112 Evolution of the Earth 4 Sem Hrs
Prerequisite: GLG 111. Study of the history of the Earth as recorded in rocks. Description of continental structural development in terms of plate tectonics using North America as the principal example. Origin and evolution of life. Laboratory work includes studies of invertebrate fossils and geologic map interpretation. Field trips optional. Formerly called Historical Geology. (45-30) W, odd numbered years only.

GLG 115 Introduction to Oceanography 4 Sem Hrs
Explores how the ocean stabilizes the Earth's surface environment. Includes global temperature distributions, El Nino events, ozone depletion, and global warming. Considers the origins and evolution of the ocean basins, currents, circulation patterns, and physical and chemical properties of seawater. Investigates the impact of humans on the marine environment, including shoreline changes, pollution effects, and extraction of natural resources. May include optional field trip to view shoreline features of the Great Lakes. (45-30)

GLG 117 Introduction to Dinosaurs 2 Sem Hrs
Introduces the study of dinosaurs, their history, development and extinction. Includes the topics of evolution and classification, physical and behavioral characteristics, and the controversy between hot-blooded and cold-blooded interpretations. Examines dinosaur extinction theories, including asteroid impacts and global volcanism, and reviews the famous dinosaur hunters and their heated competition for specimens, past and present. Optional field trip to view museum specimens. (30-0)

GLG 122 Geology of Michigan 3 Sem Hrs
An interpretation of the origin and characteristics of the principal geological features of Michigan through the application of basic geological principles. Includes some identification of rocks, minerals and fossils. Occasional field trips. (45-0) O

GLG 123 Geology of the Great Lakes Area 2 Sem Hrs
An interpretation of the principal geological features of the Great Lakes region through the application of basic geological principles. Includes some identification of rocks, minerals, and fossils. Field trip required. Students must pay own expenses. (30-0) SF

GLG 125 Geology of the National Parks 3 Sem Hrs
A study of the origin of geologic features of selected national parks. Includes an analysis of rocks, minerals, fossils, and physical landscapes as well as the geologic history of varied regions of the United States. Interpretation of topographic and geologic maps of selected areas. (45-0) O

GLG 130 Environmental Geology 4 Sem Hrs
Introduces geology as it relates to human activities, and is designed for both non-science majors and students interested in an environmental career. Emphasizes geologic hazards, including earthquakes, volcanic eruptions, flooding, mass movements, and pollution of water and soil resources. Examines waste disposal along with related topics in medical geology and environmental law. Optional field trip(s) to waste disposal sites and/or remediation sites. (45-30)

GLG 230 Introductory Field Methods in Hydrogeology 2 Sem Hrs
Prerequisite: Successful completion (grade of "C" or better) in GLG 111, or GLG 130, or BIO 110. Introduces the field techniques used in environmental site assessment, ground water monitoring, and ground water testing. Includes soil water sampling, ground water sampling, water quality testing, and water level recording. Explores topics of geophysical surveying, water well installation, piezometer installation and techniques to determine the direction of ground water flow. (15-45) S

GLG 262 Geology of the Canadian Shield 1 Sem Hr
Studies the geologic and geographic features of the Lake Superior region of Canada. Includes topics such as rock types, origin of landscape features, physical environments, natural resources, and relationships of humans with the environment. Weekend field trip required with students paying own expenses. (15-0) O

GLG 266 Geology of the Grand Canyon 2 Sem Hrs
Prerequisite: Permission of Instructor. A study of the origin and distribution of the geologic features of the Grand Canyon of Arizona. Major topics include rock types, origin of landscape features, geologic history of the Grand Canyon, and human impact of the environment. Field work in the Grand Canyon is required. Students must pay own expenses. (30-0) S

GLG 268 International Studies in Geology 1-4 Sem Hrs
A geologic interpretation of selected world regions. Emphasis on physical environments, natural geologic processes, and geologic history of the study area. Includes class lectures, individual consultation, and international field study. Expenses for the field study must be borne by the student. (60-0) O

GLG 290-299 Special Projects in Geology O

HISTORY COURSES

HIS 103 A History of American Government 3 Sem Hrs
An historical survey of the traditions and institutions of the American system of government from colonial times to the present. Special attention will be given to the historic development of the Presidency, the Congress, and the federal court system. Civil liberties, political participation, and the dynamics of federalism will also be examined from an historical perspective. (This course satisfies the American Government graduation requirement in specified curricula.) (45-0) O

HIS 111 A Survey of Early Western Civilization 4 Sem Hrs
Political, social, economic and cultural history of Europe from prehistoric times through the 1500's. Particular attention given to characteristics of civilizations and their relevant contributions to the modern world. (60-0)

HIS 112 A Survey of Later Western Civilization 4 Sem Hrs
HIS 111 recommended. Political, social, economic, and cultural history of Europe from the 1600s to the present time. Particular attention is given to cultural and democratic movements and their influence on current history. (60-0)

HIS 113 History of Michigan 2 Sem Hrs
(Not open to students with credit in HIS 114.) An exploration of the history of Michigan from the time of the first known human inhabitants, through the periods of French and British settlement and U.S. acquisition. Major emphasis will be given to the study of Michigan history through the periods of territorial status, statehood and industrial growth. Special attention will be directed toward the Saginaw Valley and its relationship to a developing Michigan. (30-0) FW

HIS 114 History of Michigan/With Project 3 Sem Hrs
(Not open to students with credit in HIS 113.) An exploration of the history of Michigan from the time of the first known human inhabitants, through the periods of French and British settlement and U.S. acquisition. Major emphasis will be given to the study of Michigan history through the periods of territorial status, statehood and industrial growth. Special attention will be directed toward the Saginaw Valley and its relationship to a developing Michigan. The student will be required to complete a major paper or project. (45-0) FW

HIS 137 History of the Saginaw Valley 2 Sem Hrs
A history of the Saginaw Valley region from pre-settlement until the present. Emphasis will be placed on viewing the Valley from the perspective of material history. A field trip to local sites or a substitute assignment is required. (30-0) O

HIS 204 American Business History 2 Sem Hrs
Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, the anti-trust movement and the effects of the Depression and New Deal on business. This course may also be taken as GB 204. Students receiving credit in this course cannot receive credit for HIS 205 or GB 204 or 205. (30-0) FW

HIS 205 American Business History/With Project 3 Sem Hrs
Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, the anti-trust movement and the effects of the Depression and New Deal on business. The student will be required to complete a major paper or project. This course may also be taken as GB 205. Students receiving credit in this course cannot receive credit for HIS 204 or GB 204 or 205. (45-0) FW

HIS 214 Early African-American History 3 Sem Hrs
Pre-European Africa to 1877
An examination of the transition of Africans to Afro-Americans, the Americanized institution of slavery, the development of the Afro-American community, and its impact on the culture and society of the new world. Also examines Afro-American resistance to slavery, free Afro-Americans, and the participation of the Afro-American community in the Civil War and Reconstruction. (45-0) O

HIS 215 Recent African-American History: 1850 3 Sem Hrs
Focus will be on the ideological, strategic and demographic changes and conflicts of Afro-Americans since emancipation, with special emphasis on legal and extra-legal terror and the many social movements (Bookerism, Garveyism, Pan-Africanism, and the 1960s). Also examines emerging Africa, new-racism, and the diversity within the current Afro-American community. (45-0) FW

HIS 217 Hispanics in the US 3 Sem Hrs
Surveys the social, cultural, economic and political history of Hispanic Americans (Spanish-speaking), which includes groups such as Mexican-Americans, Cuban-Americans and Puerto Rican-Americans, with emphasis on Mexican-Americans. Analyzes the present status of different Hispanic groups and the problems that minority groups encounter in American society. (45-0)

HIS 221 Early American History 3 Sem Hrs
An introductory course in American history from its immediate European background through the Civil War Era. Special emphasis is given to the growth of institutions and ideas. The political, economic, and social experiences of the young Republic, and their influence on contemporary American are also examined. (45-0)

HIS 222 Recent American History 3 Sem Hrs
A survey of modern America from the Gilded Age to the present with special emphasis on the formation of American character traits. Topics such as the frontier, abundance, growth of government and regulation, the Depressions, and the Cold War will be examined for their influence upon the development of the American individual. (45-0)

HIS 261 The Civil War Era 3 Sem Hrs
A survey of American Civil War era, from the origins of sectional conflict through reconstruction. While tracing the narrative development of major events, the course will examine the social, economic, political, and technological changes brought by the war, which made the Civil War the defining event in modern American history. (45-0)

HIS 268 International Studies in History 1-4 Sem Hrs
The student will do an in-depth historical study in one or more aspects of the history of the country other than the United States. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0) O

HIS 275 The Vietnam War 3 Sem Hrs
An interdisciplinary examination of the Vietnam War from its earliest beginnings as a colonial conflict to the withdrawal of American forces in 1975. The course seeks to integrate military, diplomatic and political factors in order to understand America's involvement. It also is an attempt to consider American decision-making in the broad context of the nation's global outlook and policies. Credit may be earned in HIS 275 or POL 275 but not in both. (45-0) O

HIS 290-299 Special Projects in History O

HEALTH SCIENCE COURSES

HSC 105 Medical Terminology 2 Sem Hrs
Designed to develop a basic understanding of the spelling, meaning and pronunciation of commonly used prefixes, suffixes, and root words, and their combining forms, used in all fields of allied health professions. (30-0)

HSC 140 Basic Medical Emergencies 2 Sem Hrs
Provides the background necessary to respond to basic emergency situations in the clinical setting. Includes respiratory, cardiac, neurological, and diabetic emergencies. Cardiopulmonary resuscitation certification requirements must be met for successful completion of course. (30-0)

HSC 205 Legal Aspects of the Health Care System 2 Sem Hrs
An overview of state legislation affecting various aspects of the health care system, including study of common legal problems, etc., such as dispensing of medication and privacy of medical records. Designed primarily for health care professionals. (30-0) W

HSC 290-299 Special Projects in Health Science O

HSC 310 Basics of Managed Care 3 Sem Hrs
Provides overview of managed health care industry. Discusses the origins, mechanics and effects of managed care to the patient, provider and consumer. (45-0)

HUMAN SERVICES COURSES

HSR 101 Human Services I 2 Sem Hrs
Presents an overview of the basic programs and social institutions which provide human services, as well as an introduction to basic skills needed by human services workers. (30-0) O

HSR 102 Human Services II 2 Sem Hrs
Prerequisite: HSR 101. Presents and provides opportunities to demonstrate applications of methods and problem solving techniques used by human services workers in a variety of settings. (30-0) O

HSR 290-299 Special Projects in Human Services O

INTERIOR DESIGN COURSES

ID 100 Introduction to Interior Design 3 Sem Hrs
This course will cover the aims, principles, and means of design. Light and color will be thoroughly explored including color theory and color planning. Home planning will be analyzed in relation to activities, space and equipment. Enrichment of space through the use of accessories, plants, paintings, prints, and sculpture will be studied. The student will also be introduced to lighting, heating, ventilation, and acoustics. (45-0) FW

ID 170 Design Elements 4 Sem Hrs
Prerequisite: ID 100, GB 110, and permission of instructor. Appropriate treatment and materials for windows, walls and floor coverings will be studied. Emphasis will be placed on current treatment trends and the process of measuring and translating measurement accurately into material needs and cost estimates. Field trips, guest speakers and practical experiences will be emphasized. (60-0) F

ID 200 Spatial Analysis and Presentation 3 Sem Hrs
Prerequisite: ARC 105 and ID 100. (Recommended that ID 200 and ID 210 be taken concurrently). Emphasis will be placed on the analyzation of spatial arrangement and the relationship it has to adjacent space and accepted standards. CAD and basic drawing methods will be utilized and standard building blueprints will be studied. Students will conduct presentations of floor plan arrangements, interior elevations, and interior perspectives. Familiarization with micro computers required or permission of instructor. Credit may be earned in ID 200 or ARC 200 but not in both. (45-0) W

ID 210 Furniture 3 Sem Hrs
(Recommended that ID 200 and ID 210 be taken concurrently). A study of furniture as an essential element in interior design. Major furniture styles will be covered from a historical perspective with applications to present uses. The manufacture of both case and upholstered goods for the purpose of learning construction details, order, placement and delivery cycle, and the cost to quality relationship will be included. (45-0) EW

ID 230 Applied Interior Design 3 Sem Hrs
Prerequisite: ID 210. Designed so the student will learn how to deal effectively with special problem areas in interior decoration. The student will learn how to work with clients, how to interview and determine needs and wants and translate the information into practical decorating solutions, including shopping for appropriate floor and wall coverings, furniture, window treatment and accessories. The student will work with an actual client family, be given an established budget, prepare and give appropriate oral and visual presentations to the client. (45-0) W

ID 240 Commercial Interior Design 2 Sem Hrs
Prerequisite: ID 200 and permission of instructor. A study of materials used, equipment necessary, and furniture available in the field of contract/commercial design. Legal requirements for commercial, institutional and other public spaces will be discussed. Student presentation will be emphasized. (30-0) F

ID 241 Contract/Commercial Design II 2 Sem Hrs
Prerequisite: ID 240 and permission of instructor. The application of contract/commercial elements utilizing actual space project examples. Contract design within legal boundaries will be stressed. Project examples will include commercial offices, institutional work sites and other public environments. Student presentations will be emphasized. (30-0) F

ID 245 Design Trends 2 Sem Hrs
Prerequisites: ID 241, ID 230 or concurrently. Study of current trends in furniture, accessories, textiles, and lighting. Student presentation, guest speakers and field trips will be emphasized. This is a "capstone" course recommended to be taken concurrently with ID 230. (30-0) W

ID 250 Seminar in Interior Design 2 Sem Hrs
Prerequisite: ID 100 or permission of instructor. Students will study the New York interior design market. Displays, styles of furniture, and current period representations will be studied at the manufacturer showrooms. Tour of designers' studios and discussion with area designers, lamp and accessories, museums, school, textiles company, carpeting firms and other places of interest will be included. Normally, the class will spend one week in New York at the beginning of spring semester. Students pay tuition plus all expenses. (30-0) S

ID 251 Merchandise Mart Experience 1 Sem Hr
Prerequisite: ID 100 or permission of instructor. Primarily for majors in the Interior Design curriculum. Students will study the Chicago Merchandise Mart and area resources available to interior designers. Opportunity to visit manufacturing plants, showrooms, area designers, retail operations, museums and other places of interest will be arranged. Normally the class will spend three days in the market. Students pay tuition plus all their expenses. (15-0) F

ID 290-299 Special Projects in Interior Design

INTERDISCIPLINARY HUMANITIES COURSES

IHU 101 Humanities Through the Arts 3 Sem Hrs
A survey of the human condition as seen through film, dramas, music, literature, painting, sculpture, and architecture with an emphasis on the history, techniques, meaning, and evaluation of individual works of western art. (45-0)

IHU 102 Chicago Cultural Forms: An Interdisciplinary Humanities Field Trip 3 Sem Hrs
The humanities will be directly experienced through the rich cultural heritage of Chicago reflected in its renowned museums, architecture, outdoor art treasures, ethnic mix jazz clubs, local theater troupes, the Chicago Symphony and Lyric Opera. Cultural forms will be studied to discover the contribution to life by the humanities. Students must pay own expenses. (45-0) O

IHU 161 International Projects in Cross-Cultural Learning 1 Sem Hr
Student volunteers will be assigned to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 30 hours volunteer placement is required). Credit may be earned in SOC 161 or IHU 161, but not both. (15-30) O

IHU 162 International Projects in Cross-Cultural Learning 2 Sem Hrs
Student volunteers will be assigned to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 60 hours volunteer placement is required.) Credit may be earned in SOC 162 or IHU 162, but not both. (15-60) O

IHU 201H Honors Colloquy 3 Sem Hrs
Prerequisite: Approval by Honors Program Director. Required of all Honors students. Explores the elements of critical and creative thinking. Emphasizes relationships among thinking, writing, and productive interaction with others, as well as the interdisciplinary nature of truth and knowledge. Includes project and/or research writing at instructor's discretion. Credit may be earned in LIT 201H or IHU 201H but not both. (45-0)

IHU 216 Producing a Student Publication 4 Sem Hrs
Prerequisite: ENG 111. Provides a guided opportunity to learn about publishing by compiling, selecting, editing, and designing an annual publication of student writing, photography, and artwork. Focuses on hands-on experience in critical reading, writing, and thinking; editing; layout; production details; marketing; design; and distribution. (60-0) W

IHU 282H Seminar in Social Issues 3 Sem Hrs
Prerequisite: Honors program participant or permission of instructor. An integrated study involving exploration and development of critical thinking, analysis and problem-solving skills with an interdisciplinary approach focusing on a selected social issue. (45-0) W

IHU 290-299 Special Projects in Interdisciplinary Humanities

INDUSTRIAL SUPERVISION COURSES

IS 104 Construction Foreman Training 3 Sem Hrs
Course developed by construction people for construction people who wish to acquire foreman training skills. Covers job supervisor's role as the person in the middle and relates the concepts of leadership, motivation, problem solving, communication, training, safety, materials handling and evaluation to foreman tasks. (45-0) O

IS 110 Industrial Supervision 3 Sem Hrs
Designed to give the student a general understanding of the following areas: Introduction to management; organization structures; product development; plant location and equipment; cost controls, material and production controls; personnel administration and management. (45-0) FE

IS 118 Industrial Safety 2 Sem Hrs
Safety fundamentals as related to the economics of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, plant housekeeping, occupational diseases, first aid, safety organization, protective equipment, and the promotion of safe practices. (30-0) FE WD

IS 120 Supervisor/Employee Relations 3 Sem Hrs
Prerequisite: IS 110. Course designed to help the supervisor solve day-to-day people problems. Presents techniques for communication and decision-making which are based on work experience and scientific research. (45-0) FE

IS 240 Production Planning & Control 4 Sem Hrs
Prerequisites: MFG 111, MT 110 or MTH 100 or equivalent. Pre-production planning of the most economical methods, machines, operations, and material for the manufacture of a product. The planning, scheduling, routing, and detailed procedure of production control. (60-0) O

IS 290-299 Special Projects in Industrial Supervision O

LEGAL ASSISTANT STUDIES COURSES

LAS 110 Roles & Responsibilities 2 Sem Hr
Provides an overview of the various roles, responsibilities, and problems found in the Legal Assistant profession, and the legal ethics, legal terminology, and basic skills needed. Introduces legal forms and procedures, as well as computer skills and computer programs. Addresses preparation for the CLA Examination, the importance of communication skills, keeping track of deadlines, calendars, and mailing procedures. (30-0) F

LAS 115 Principles of Substantive Law 3 Sem Hrs
Prerequisite: LAS 110 or concurrently. A general introduction to the dynamics of the law and legal process, including the origin and development of the law, types of law and the judicial system. Examination of substantive legal subjects including contracts, torts, property, criminal and business related subjects. Emphasis on recognition of legal issues and the understanding of legal terminology. (45-0) FE

LAS 120 Legal Research & Writing I 3 Sem Hrs
Prerequisite: LAS 110, LAS 115 and ENG 111 or OSE 151. Legal research techniques to familiarize students with the most frequently used reference materials. Includes basic legal reasoning and writing skills for logical, organized problem solving. (45-0) WE

LAS 125 Civil Litigation I 2 Sem Hrs
Prerequisite: LAS 115. The various stages of evaluating and preparing a civil matter for litigation, using Michigan rules of civil procedures and evidence will be presented. An efficient and systematic way of handling fact investigation, drafting pleadings, discovery and file control will be studied. (30-0) WE

LAS 130 Legal Research & Writing II 3 Sem Hrs
Prerequisite: LAS 120 with minimum grade of C (2.0). Specialized legal research techniques, trial and appellate briefs and state and federal law. Basic legal reasoning and writing skills for logical, organized problem solving. Independent research in a law library may be necessary. (45-0) SE

LAS 135 Civil Litigation II 2 Sem Hrs
Prerequisite: LAS 125. Pretrial stages of a lawsuit with emphasis upon trial preparation including motions in limine, witness preparation and jury voir dire, concluding with trial and post-trial motions and the appeal process. (30-0) WE

LAS 150 Real Estate Law 2 Sem Hrs
Prerequisite: Enrollment in either the Legal Assistant Studies program, the Real Estate program, or permission of instructor. Introduces the principles of real estate law. Familiarization with the process and procedures involved in the buying and selling of real estate, mortgage loans and leasing, in addition to preparing or evaluating surveys and legal descriptions, deeds of conveyance, title search reports, agreements, closing and leases. (30-0) W

LAS 201 Computer Assisted Legal Research 1 Sem Hr
Prerequisites: LAS 130 or GB 252 and OSE 170 or permission of instructor. Develops familiarity with the use of commercially available legal databases, including development of search queries. (Outside lab assignments may be required). (15-0)W

LAS 210 Estate and Trust Administration 2 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. An in-depth study of the administration of a decedent's estate from initial conference through the closing of an estate and the distribution of assets with emphasis on preparation of proper probate documentation, preparation of proper tax returns including federal estate tax returns and fiduciary returns, and explanation of Michigan inheritance tax. (30-0) FE

LAS 220 Environmental Law 2 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. A survey of issues pertaining to environmental law. Emphasis on the process of integrating environmental policies into the social system, implementing environmental policies through the legal system, and accommodating environmental values with economic realities, traditional property rights, and national energy policy. (30-0) WE

LAS 230 Administrative Law 2 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. Overview of the functions and procedures of government agencies. Includes analyzing statutory authority and subsequent case law, preparing and processing claims, providing information sought by administrative subpoenas and taking depositions. (30-0) WE

LAS 235 Criminal Law and Procedure 3 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. A study of formal legal processes involved in criminal practice from arrest through post-trial motions, sentencing and appeal. Constitutional rights of the accused and the definitions of various criminal offenses will also be covered. (45-0) WE

LAS 240 Domestic Relations 2 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. A study of the theoretical and practical aspects of family law with an emphasis on Michigan family law, including dissolution of marriage, child custody, support, property settlements, judgements and the role of the Friend of the Court. Basic techniques in obtaining facts from clients in order to prepare and draft complaints, answers, financial affidavits and verified statements will be presented. (30-0) WE

LAS 245 Personal Injury 3 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. An introduction to medical terms based on a "building block" system of word formation. The principles and legal theories relating to intentional and negligent torts to the person. Will include workman's compensation, malpractice/negligence of professionals, auto negligence, products liability, dram shop liability, assault and battery, and premises liability. (45-0) WE

LAS 250 Corporate Law 2 Sem Hrs
Prerequisite: Students in Legal Assistant Studies program or permission of instructor. The nature of corporations, partnerships and proprietorships with an emphasis on the corporate structure including formation and dissolution, amending Articles of Incorporation and by-laws, shareholders' and directors' meetings, corporate equity and debt securities, as well as employment and shareholders agreements. (30-0) FE

LAS 253 Bankruptcy Law 2 Sem Hrs
An overview of bankruptcy law. Designed to illustrate not only the legal aspects of the law, but to demonstrate the practical approach to working in this area. A review of Federal Bankruptcy law, the different types of bankruptcy chapters, exemptions, dischargeable and non-dischargeable debts, preferences, the role of the Bankruptcy Trustee and preparation of petitions and schedules in bankruptcy. Emphasis will be placed on the effective use of the legal assistant. (30-0) O

LAS 260 Legal Assistant Internship 2 Sem Hrs
Prerequisite: Must have completed all Legal Assistant Studies required courses or permission of LAS Coordinator. Requires eighty (80) hours of work experience in a law or law-related office. (10-0)

LAS 290-299 Special Projects in Legal Assistant Studies O

LIBRARY SCIENCE COURSES

LIB 195 Library Research Skills 1 Sem Hr
Develops the ability to access, analyze, evaluate, use, document, and communicate information from library sources including electronic indexes, the on-line catalog, and introduces Internet. (15-0)

LIB 290-299 Special Projects in Library Science O

LITERATURE COURSES

LIT 201H Honors Colloquy 3 Sem Hrs
Prerequisite: Approval by Honors Program Director. Required of all honors program students. Explores the elements of critical and creative thinking. Emphasizes relationships among thinking, writing, and productive interaction with others, as well as the interdisciplinary nature of truth and knowledge. Includes project and/or research writing at instructor's discretion. Credit may be earned in LIT 201H or IHU 201H but not both. (45-0)

LIT 219 Literary Analysis 3 Sem Hrs
Prerequisite: ENG 112. A survey of, and practice in, methods of literary interpretation and appreciation, from the close reading strategies of New Criticism to the contemporary considerations of reader-response theory. Interpretive papers on particular works of fiction, poetry and drama are required. (45-0) FW

LIT 220 Readings in Poetry 3 Sem Hrs
Prerequisite: ENG 112. Studies the background, developments, and the current state of modern poetry. Emphasizes poetry by American and British authors. (45-0)

LIT 221 Readings in the Short Story 3 Sem Hrs
Prerequisite: ENG 112. The student will read selected short stories of British, American, and other authors in addition to increasing one's understanding of this relatively modern form, the student will explore ways in which the short story is personally meaningful in depicting our perception of ourselves and the world in which we live. (45-0) FW

LIT 222 Readings in the Novel 3 Sem Hrs
Prerequisite: ENG 112. From a reading of selected novels the student will develop understanding of the novel form. The student will also learn how to derive personal meaning and satisfaction from novels chosen from different times, places, and cultures. (45-0) F

LIT 223 Readings in Drama 3 Sem Hrs
Prerequisite: ENG 112 or instructor permission. Studies historical and popular American, British and other plays. Examines the effects of drama on both American, British and other cultures. (45-0)

LIT 224 Popular Literature 3 Sem Hrs
Prerequisite: ENG 112 or permission of instructor. An examination of a particular body of popular literature, organized by the selection of material either from the works of one author or one genre (e.g. Science Fiction, Black Humor, War Novel, etc.) Course content to be announced each semester prior to registration. (45-0) FW

LIT 226 Introduction to Film 3 Sem Hrs
Follows the creation of a film from the original idea to final production. Examines film as a model of popular entertainment and as an art form. Focuses on identifying the media's components and developing the viewers' standards of appreciation. (45-0)

LIT 227 The American Motion Picture 3 Sem Hrs
Prerequisite: ENG 112. Studies popular films, with major emphasis on American culture as reflected in the motion picture. Examines the effect of the images portrayed in motion pictures on the perception of American society and history; topics vary from semester to semester. (45-0)

LIT 241 Introduction to Mythology 3 Sem Hrs
Prerequisite: ENG 112. Provides an introduction to some of the concepts of mythology and the presence of these concepts in art and literature in particular. Considers the functions of mythology, the universality of the journey patterns in all myths, the nature of mythic imagery, the distinction between mythos and logos as patterns in thinking, the approaches available in examining particular myths and the application of all these dimensions in reading a given story. (45-0)

LIT 242 Introduction to British Literature 3 Sem Hrs
Prerequisite: ENG 112. Provides a sampling of the work of some of the major authors in British Literature. Requires works to be read and examined for an understanding of the material, an appreciation of the literary forms and for the awareness of unifying themes that hold together a culture's conceptual framework. Enhances reading skills and aesthetic appreciation through exposure, discussion, writing and critical thinking. (45-0)

LIT 245 Biblical Literature: Old Testament 3 Sem Hrs
This course will be a critical study of the literature of the Old Testament. It will treat the Old Testament Canon in its historical development, and examine both the literary styles and the changing theological and ethical ideas. (45-0) O

LIT 246 Biblical Literature: New Testament 3 Sem Hrs
A critical study of the literature of the New Testament with some attention given to the Inter-Testamental literature. The literature will be studied in terms of its historical development. Some attention will be given to the canonization of the New Testament, to the different literary styles and to the theological and ethical ideas. (45-0) O

LIT 251 Children's Literature 4 Sem Hrs
Prerequisite: ENG 112 or equivalent second level writing course. Surveys literature for children in the elementary grades. Explores quality trade books for children; presents respected writers and illustrators in various genres. Dispels commonly misconceived and generic thinking about children's literature, replacing with more perceptive criteria and reflective judgment of book selection. Results in greater knowledge, understanding, and appreciation of children's literature. (60-0)

LIT 253 Literature for Preschool Children 3 Sem Hr
Surveys quality fiction and nonfiction trade books for preschool children, with emphasis on top writers and illustrators of the best, most engaging literature. Increases awareness of how literature speaks to young children and engages them in language and learning experiences. (45-0)

LIT 260 Holocaust History & Literature 3 Sem Hr
Designed especially for students new to Holocaust studies. Covers the years 1933 to 1945, focusing on the role of perpetrators, victims, bystanders, and those involved in resistance and rescue. Uses a variety of readings, guest speakers, films and a field trip to the Holocaust Memorial Museum in West Bloomfield to address core questions: How did the Holocaust happen? Who is responsible? What can we learn from this catastrophe? (45-0)

LIT 268 International Studies in Literature 1-4 Sem Hrs
The student will do an in-depth study in one or more aspects of the literature or film of a country other than the United States. Includes class lectures and individual consultation. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. O

LIT 269 Native North American Literature 3 Sem Hrs
Prerequisite: ENG 112. Surveys the literature of Native North Americans: poetry, short stories, novels and non-fiction, including biographies of important Indian leaders. Develops an understanding of the cultures which produced the literature. (45-0)

LIT 271 American Literature to 1865 3 Sem Hrs
Prerequisite: ENG 112. Studies major movements and themes in American literature as they appear in the works of important authors from the Puritan period to and including the Age of Romanticism (45-0)

LIT 272 American Literature Since 1865 3 Sem Hrs
Prerequisite: ENG 112. Studies major movements and themes in American Literature after the age of Romanticism through the Age of Realism and New Directions. (45-0) W

LIT 274 Mexican-American Literature 3 Sem Hrs
Prerequisite: ENG 112 or permission of the instructor. Studies novels, short stories, poetry and non-fiction by Mexican-Americans. Explores some cultural elements such as ethnicity, self-hood, self-definition, machismo and gender issues, religious influences, the tradition of curanderos and la lloron. Constructs an understanding of how culture (can) affect creative expression. (45-0)

LIT 276 Contemporary American Fiction (1945 to Present) 3 Sem Hrs
Prerequisite: ENG 112 or permission of instructor. Studies trends, techniques, and themes in recent American novels and short stories. Requires reading, analyzing, and critiquing works of modern writers. (45-0)

LIT 277 Early African-American Literature 3 Sem Hrs
Prerequisite: ENG 112 or equivalent. Studies American history and trends that affected African-American writers from the oral tradition to the written works. (45-0)

LIT 278 Modern African-American Literature 3 Sem Hrs
Prerequisite: ENG 112 or equivalent. Studies current trends in both cultural and historical contexts. Examines the ways in which Modern African-American Literature is influenced by American history and how it affects the lives of African-Americans. (45-0)

LIT 283 Literature of Mysticism 3 Sem Hrs
Prerequisite: ENG 112. Explores literature about mysticism, both secular and religious. Designed to help students begin an inner search for authenticity, personal integration and self-awareness. Provides a variety of possibilities for developing innate potentialities and for achieving altered states of consciousness through awareness exercises, meditation, chanting, fantasy journeys and journal writing. (45-0)

LIT 285 Women in Literature 3 Sem Hrs
Discusses women as literary characters and as authors in time periods and cultures selected by instructor. Concentrates on women's perceptions of social structures, the blending of private and public spheres, and women's relationships to the world of publishing and literary criticism. Contrasts a woman-centered look at literature with more traditional, canonical approach to literature. (45-0)

LIT 290-299 Special Projects in Literature O

LIFELONG WELLNESS ACTIVITY COURSES

LW 101 Fitness for Life 1 Sem Hr
Introduces basic concepts underlying fitness and wellness as they relate to optimal healthful living using a wide variety of aerobic conditioning and resistance training techniques. (0-30)

LW 105 Womens Fitness 1 Sem Hr
Introduces women to the basic concepts underlying physical fitness as it relates to optimal healthful living through the use of practical experience and exercise applications. (0-30)

LW 107 Weight Training for Men 1 Sem Hr
A systematic program of body conditioning and development through the use of weight exercises as the main emphasis. (0-30)

LW 109 Weight Training for Women 1 Sem Hr
A systematic program of body conditioning and development through the use of weight exercises as the main emphasis. (0-30)

LW 111 Circuit Training 1 Sem Hr
Designed to maintain and improve physical fitness levels. Weights, calisthenics and endurance exercises are used in different combinations to provide complete workouts in a limited amount of time. (0-30) FW

LW 113 Tae Kwon Do I 1 Sem Hr
Non-contact martial art class stressing prior technique and qualities of respect, self-discipline, and skills of self-defense. (0-30)

LW 114 Tae Kwon Do II 1 Sem Hr
Prerequisite: LW 113 or Instructor permission. Intermediate non-contact martial art class stressing advanced techniques. Uniform required. (0-30)

LW 117 Sports Judo--Women 1 Sem Hr
Introduction to the rules, skills, and courtesies in sports judo as well as the special conditioning required (0-30) FW

LW 119 Sports Judo--Men 1 Sem Hr
Introduction to rules, skills and courtesies in sports judo as well as the special conditioning required. (0-30) FW

LW 121 Intermediate Sports Judo 1 Sem Hr
Prerequisite: LW 119 or permission of instructor. Continuing improvement of beginning techniques, additional throwing, groundwork, and combination throwing techniques taught. (0-30) FW

LW 123 Basketball for Women 1 Sem Hr
Covers basic skills of passing, dribbling, shooting, and team play. Rules and strategy also included. (0-30) FW

LW 125 Basketball for Men 1 Sem Hr
Covers basic skills of passing, dribbling, shooting and positional play. Rules and strategy are included. (0-30) FW

LW 127 Volleyball I 1 Sem Hr
Basic skills of handling the ball, passing setting, spiking, net-rebound play, and blocking. Rules and strategy are included. (0-30) O

LW 128 Volleyball II 1 Sem Hr
Prerequisite: LW 127 or permission of instructor. Continuing improvement of beginning skills and the addition of experience in advanced play. Advanced strategies including offensive play patterns (4-0, 6-0, and switching) and defensive play patterns (middle back and middle up). Use of current USVBA rules. (0-30) W

LW 131 Racquetball I 1 Sem Hr
Introduces basic skills and rules necessary to participate in racquetball which is a competitive game played in a four-walled court by two, three, or four players using stringed racquets to serve and return the ball. (0-30)

LW 132 Racquetball II 1 Sem Hr
Prerequisite: LW 131 or Instructor permission. Emphasizes development of advanced skills, strategies, techniques, and court positioning. (0-30)

LW 135 Badminton I 1 Sem Hr
Techniques and use of the various shots, along with rules and strategies. (0-30)

LW 137 Tennis I 1 Sem Hr
An introduction to the basic strokes in tennis along with rules, strategies, and courtesies of the game. Special fees are charged when taught off campus in indoor tennis facilities. (0-30)

LW 139 Bowling I 1 Sem Hr
Fundamentals of starting stance, approach, and delivery, with emphasis on spot aiming. Courtesies, rules and scoring are also covered. There is a lane fee for each class meeting at which you bowl. (0-30)

LW 140 Bowling II 1 Sem Hr
Prerequisite: LW 139 or permission of instructor. Designed to further refine the skills (hook delivery, spot bowling, specific spare pin pickup, and adaptation to lane conditions) of the bowler. (0-30) FW

LW 143 Soccer I 1 Sem Hr
Basic skills in kicking, dribbling, heading, and positional play. Rules and strategy are included. (0-30) F

LW 145 Softball 1 Sem Hr
Covers throwing, catching, batting, and base running, along with the rules of play. (0-30) S

LW 147 Archery 1 Sem Hr
Introduction to the basic skills in shooting, both recurved and compound bows, in target and field archery. Students must furnish own arrows and finger protection. (0-30)

LW 149 Golf I 1 Sem Hr
Fundamentals in the use of woods, irons, and putter along with the rules and courtesies of the game. A fee is charged for off campus golf course use. (0-30) FS

LW 150 Golf II 1 Sem Hr
Prerequisite: LW 149 or permission of instructor. Emphasis will be directed to the acquisition of the finer skills of the game of golf. Major attention will be given to the areas of shot placement and control, club selection, rule interpretation. (15-15) FS

LW 153 Dance Aerobics 1 Sem Hr
Provides information and skills needed to assess and improve fitness through the use of aerobic dance, exercises to music, and analysis of personal nutrition habits. (0-30)

LW 155 Slide Aerobics 1 Sem Hr
Prepares and strengthens the body for lateral or angular stress while providing a superb cardiovascular workout. Incorporates upper and lower body strength and endurance resistance exercises in addition to developing endurance, power, and balance. (0-30)

LW 157 Step Aerobics 1 Sem Hr
Incorporates bench stepping to enhance cardiorespiratory endurance and muscle tone using the aerobic principle. Emphasis on the importance of fitness and a healthy lifestyle is also applied. (0-30)

LW 159 Fitness Walking 1 Sem Hr
Introduces the concept of daily walking to contribute to one's wellness, with emphasis on developing personal walking program. (15-15)

LW 163 Modern Dance I 1 Sem Hr
For the beginner, an introduction to fundamentals of body movement through rhythmic activities designed to improve strength, flexibility, timing, spatial awareness and coordination. Also included will be problems in improvisation and simple choreography, and a brief survey of the history of modern dance and the contemporary dance scene. (0-30) FW

LW 164 Ballroom Dancing 1 Sem Hr
Introduces the basic steps and music of the Fox Trot, Waltz, Swing, Cha Cha, Rhumba, and Tango. (0-30)

LW 165 Jazz Dance I 1 Sem Hr
For the beginner, an introduction to basic jazz dance techniques (stretches, isolations, floor work, turn and locomotor patterns, etc.) and practice in combining them into dance phrases. There will be simple choreography problems and a survey of the history of jazz dance and of the contemporary jazz dance scene. (0-30) FW

LW 167 Ballet I 1 Sem Hr
An introduction to the basic movements of ballet coordinated with exercises for stretching, flexing, and toning. Also stresses postural alignment and correction, basic barre work, and beginning center adage and allegro movements. (0-30) FW

LW 168 Ballet II 1 Sem Hr
Prerequisite: LW 167 or instructor permission. Continues and further develops the basic movements introduced in Ballet I with emphasis on combinations of movements (enchainments) to develop concentration, balance and speed. (0-30) FW

LW 171 Swimming for Nonswimmers 1 Sem Hr
For those individuals who do not know how to swim and who have a fear of water. It will include personal safety skills, physical and mental adjustment to the water and fundamental swimming skills. (0-30)

LW 172 Swimming I 1 Sem Hr
A "learn to swim" course for beginners. Fundamental swimming and safety skills are stressed. (0-30)

LW 173 Swimming II 1 Sem Hr
Prerequisite: LW 172. Theory and practice of the five basic swimming strokes (front crawl, side stroke, elementary back stroke, and breast stroke). Water safety skills and knowledge are emphasized. (0-30)

LW 174 Swimming III--Conditioning 1 Sem Hr
Prerequisite: LW 173. This course will acquaint the student with the basic principles of cardiovascular fitness and strength in order to increase these components of fitness through swimming. (0-30)

LW 176 Lifeguarding 1 Sem Hr
Prerequisite: Skill and knowledge of the five basic strokes. The American Red Cross units and progressions will be followed. Successful completion of all the lifesaving and water safety requirements will result in certification. (0-30) FW

LW 178 Scuba Diving I 1 Sem Hr
Prerequisite: ability to swim. Techniques and information regarding use of self-contained underwater breathing apparatus including mask, fins, and snorkel. Includes classroom lecture, demonstration and pool dives. Students will be required to purchase a mask and snorkel plus pay an equipment fee as per guidelines given during first class session. (0-30)

LW 179 Scuba Diving II 1 Sem Hr
Prerequisite: LW 178 or instructor's permission. Information, techniques, and practice in the use of self-contained underwater breathing apparatus for open water diving. Procedures covering dressing, equipment, buoyancy, kicks, descents, ascents, and the use of the compass are included. Course necessary for SCUBA certification. (0-30) N

LW 181 Adapted Aquatics Aide 1 Sem Hr
Swimming techniques, water exercises, simulation of disabilities, supervised practice teaching, and basic water safety involved with physical and mental impairments. (0-30) FW

LW 183 Water Aerobics I 1 Sem Hr
Introduces the basic concepts of water resistance and incorporates them into an individual fitness program that promotes strength, flexibility, and aerobic capacity. Swimming skills not required. (0-30)

LW 185 Water Safety Instructor 1 Sem Hr
Prerequisite: Current American Red Cross Emergency Water Safety or Lifeguard Card and swimmer level skills. Instructional methods and techniques in aquatics, practice teaching, water safety, survival swimming, swimming program development and pool and waterfront administration. Satisfactory completion of the course may result in certification as a Water Safety Instructor. (0-30) O

LW 188 Skiing I 1 Sem Hr
Emphasis is placed on the fundamental skills. The student will be taught gliding wedge, wedge turn, traversing and stem turn. Student must furnish or rent equipment and pay skiing charges. (0-30) WE

LW 189 Skiing II 1 Sem Hr
Prerequisite: LW 188 or equivalent skill level. Student will begin the transition from steered turn to sliding turn. Side slipping, uphill christie and stem christie will be taught. Student must furnish or rent equipment and pay skiing charges. (0-30) WE

LW 190 Skiing III 1 Sem Hr
Prerequisite: LW 189 or equivalent skill level. Student will learn the finer points of parallel skiing. Parallel christie, parallel with check, and short swing will be taught. Student must furnish or rent equipment and pay skiing charges. (0-30) WE

LW 192 Cross Country Skiing 1 Sem Hr
Emphasis is placed on fundamentals in cross country skiing. Students will be taught selection and care of equipment, rudimentary ski movements, step turn, moving ahead over snow, controlling speed, half plow turn, poling, moving step and moving step turn, kick turn, skiing uphill, and waxing for various temperatures. Student must furnish own equipment and pay any special fees. (0-30) W

LW 194 Snowboarding 1 Sem Hr
Introduces the fundamentals of snowboarding including the basics of skating, climbing, gliding, and turning and stopping. Emphasizes board and speed control through the use of side slipping, traversing, and garland turns. Student must provide or rent snowboard and pay for lift ticket. (0-30) W

LW 201 Fencing I 1 Sem Hr
An introduction to foil fencing, its basic fundamentals, techniques, rules and safety measures. (0-30) FW

LW 202 Fencing II 1 Sem Hr
Prerequisite: LW 201 or permission of instructor. Designed to further refine the basic fundamentals and the opportunity to expand knowledge and improve skills. Advance strategies included are: compound attacks and compound returns, false attacks on preparation and counter attacks. (0-30) FW

LW 204 Bicycling 1 Sem Hr
Emphasis is placed on the fundamentals of cycling. Will cover selection and maintenance of equipment, gearing, pedaling, the techniques of shifting. Inherent in this activity will be physical conditioning to successfully complete the course. Student must furnish own bicycle. (0-30) F

LW 206A Occupational Wellness I 1 Sem Hr
Prerequisite: Admission to RAD or NUR programs. Introduces wellness concepts, behavioral patterns, and activities that can be incorporated into the lifestyles of those working in a wide variety of health occupational settings. (15-0)

LW 206B Occupational Wellness 2 .5 Sem Hrs
Prerequisite: Admission to RAD or NUR programs. Continues wellness concepts, behavioral patterns, and activities that can be incorporated into the lifestyles of those working in a wide variety of health occupational settings. (15-0)

LW 206C Occupational Wellness 3 .5 Sem Hrs
Prerequisite: Admission to RAD or NUR programs. Continues wellness concepts, behavioral patterns, and activities that can be incorporated into the lifestyles of those working in a wide variety of health occupational settings. (15-0)

LW 209 Canoeing I 1 Sem Hr
Instruction in the basic paddling strokes and maneuvering techniques, methods of canoe transportation, launching, and boarding and canoe rescue. Involves on-campus classroom sessions and a weekend at a lake or river in Northern Michigan. Student must pay own expenses, canoe rental, food and transportation. (0-30) F

LW 211 River Canoeing/Camping 1 Sem Hr
Review of basic paddling techniques and instruction in advanced paddling techniques, plus care and repair of equipment. There will also be a review of first aid techniques, canoe transport launching and preparing for a two or three day river canoeing/camping experience. The student is expected to have basic swimming skills. The class involves on-campus classroom/pool sessions and on river canoeing and camping. Students must pay their own expenses, canoe rental, food and transportation. (0-30) F

LW 213 Backpacking I 1 Sem Hr
To develop an understanding of and proficiency in the theory and techniques of backpacking. Primary emphasis will be directed to equipment selection, planning a camping trip, menu selection and outdoor cooking, safety, knot tying, and the sound use of conservation practices in the outdoors. These skills will be applied during an off campus weekend field trip normally. Students must pay own expenses. (0-30) FS

LW 215 Sailing 1 Sem Hr
Basic theory, skill and techniques in small boat sailing, i.e., sailboat safety, nomenclature, knot tying, helmsman ship, sail handling, jibbing and coming about, docking under sail. A fee is charged for boat rental. (0-30) S

LW 217 Rowing 1 Sem Hr
Prerequisite: Ability to swim. Explanation, demonstration, and practice in the basic techniques, equipment, and safety needed in rowing. Instruction and rowing will take place at the Rowing Club facilities in Bay City. Additional lab fee required. (0-30) S

LW 219 Horsemanship I 1 Sem Hr
Introduces the fundamentals of horsemanship including active participation in riding, grooming, saddling, bridling, leading, and other areas of general horse care. Emphasizes safety techniques while riding. (0-30)

LW 225 Lifelong Wellness 1 Sem Hr
Introduces students to wellness concepts through a broad range of personal experiences within the seven elements of wellness: social, physical, occupational, environmental, intellectual, emotional, and spiritual. Provides the basis for selecting those habits, behaviors, and programs which, if applied, will enable students to maintain the highest qualities of wellness throughout their life. (15-15)

LW 280 Self-Defense/Fitness 2 Sem Hrs
Prerequisite: permission of instructor. Con-current enrollment in CJ 101, LWT 175, and OSE 153 for Basic Police Training Academy. Teaches methods of self-defense using pressure points and leverage for subject control. Emphasizes subduing dangerous or violent individuals for criminal justice purposes. Fitness module emphasizes regular program of calisthenics, stretching, strength building, and conditioning through aerobic and non-aerobic activities. Grade of "C" (2.0) or better in this course in order to complete Basic Police Training Academy. (0-60)

LW 290-299 Special Projects in Lifelong Wellness Activities O

LIFELONG WELLNESS THEORY COURSES

LWT 165 Community First Aid 1 Sem Hr
Introduction to basic first aid skills. Necessary as the primary link in the Emergency Medical Services system. Adult CPR certification may be received. (15-0)

LWT 170 Cardiopulmonary Resuscitation 1 Sem Hr
Development of cardiopulmonary resuscitation (CPR) knowledge and skills to a degree that an individual could meet the needs of most situations in which emergency first aid care of CPR is required. (15-0)

LWT 175 Advanced First Aid and Emergency Care 3 Sem Hrs
Prerequisite: permission of instructor. CJ 101, LW 201, and OSE 153 must be taken concurrently for Basic Police Training Academy. Provides knowledge and practical skills necessary to assist victims of injury or sudden illness. Covers CPR, wounds, choking, poisoning, substance abuse, burns, exposure to heat and cold, emergency childbirth, fractures, stroke, convulsive disorders, diabetes, auto and pool extrication. Successful completion of course entitles student to American Red Cross CPR and Advanced First Aid Certifications. Grade of "C" (2.0) or better in this course in order to complete Basic Police Training Academy. (45-15)

LWT 266 Teaching of Elementary Physical Education 3 Sem Hrs
For prospective teachers; deals with curriculum development, principles, methods and materials used in conjunction with the teaching of physical education in the elementary schools. (45-0) FW

LWT 290-299 Special Projects in Lifelong Wellness Theory O

MEDICAL ASSISTANT COURSES

MA 205 Medical Office Pharmacology 1 Sem Hr
Prerequisites: BIO 101, HSC 105, or permission of instructor. Necessary information to comply with the federal laws regarding accurate and secure drug records and the interpretation of prescriptions and communication of medication orders to other professionals. (15-0) WD

MA 206 Pharmacology Applications 1 Sem Hr
Prerequisites: MA 205, MA 210, or Permission of instructor. Preparation and administration of drugs commonly used in the medical office, and principles of self administration of medications. (15-0) WD

MA 210 Assisting the Physician I 4 Sem Hrs
Prerequisites: BIO 101, BIO 102, HSC 105, MTH 117, and OSE 116, each with a minimum C (2.0) grade. Provides the opportunity to develop medical assisting skills used in a health care setting. Includes determination of vital signs, patient preparation, basic laboratory techniques and the care of office instruments. (45-45) F

MA 220 Assisting the Physician II 4 Sem Hrs
Prerequisite: MA 210 with C (2.0) minimum grade. Provides the opportunity to develop skills for informing electrocardiograms, assisting in minor surgeries and assisting the physician in the administration of treatments and medications. (45-45) WD

MA 230 Medical Assistant Internship 5 Sem Hrs
Prerequisite: MA 105, MA 220, HSC 140, HSC 205, OSE 152, OSE 157, OSE 172, OSE 255, OSE 266, OSE 276 each with a minimum C (2.0) grade and SPH 114. Provides the opportunity to observe and practice medical assisting skills in a health care setting. Seminars held on campus will provide a forum for discussion of office experiences. (40-140) SD

MA 290-299 Special Projects in Medical Assisting O

MECHANICAL DESIGN AUTOMATION TECHNOLOGY COURSES

MDA 205 Rapid Prototyping and Tooling .6 Sem Hrs
Prerequisite: MDA 211 and MFG 111. Surveys this emerging time-compression technology and identifies how it is changing the design/manufacturing interface. Covers specific rapid prototyping processes such as stereolithography, selective laser sintering, fused deposition modeling, and laminated object modeling. Demonstrates the linkage between manufacturing and rapid tooling processes of core and cavity inserts for moldings and castings. (9-0)

MDA 211 Interactive Part Modeling 2.4 Sem Hrs
Prerequisites: ENG 112, MTH 113, PHY 111, MS 113, MT 221, MT 244, DRF 104 or DRF 105 and CAD 114, MT 252, MFG 111, MT 220 and EET 235 plus counselor permission. Provides instruction and practice in the varied methods within UNIGRAPHICS software to create, manipulate, store, and display parts and groups of parts. Uses constraint bases definition of geometric features as well as traditional methods to make, edit, catalog, and store wire-frame, surface, and solids geometric models. (36-0)

MDA 290-299 Special Projects in Design Technology O

MDA 305 Design For Assembly 1 Sem Hr
Prerequisite: MDA 211, MT 256 or DRF 257. Uses the Boothroyd/Dewhurst Design for Assembly software to redesign a manufactured product. Emphasizes teamwork in a Concurrent Engineering simulation. (15-0)

MDA 312 Sketch Modeling 1.6 Sem Hrs
Prerequisite: MDA 211. Develops explicit virtual models from approximate geometry. Incorporates use of previously defined shapes to modify current model. Includes use of dimensional parametric, and design intent to define, modify and constrain forms. F (24-0)

MDA 313 Product Information Management 2 Sem Hrs
Prerequisite: MDA 312. Provides methods for using database within Unigraphics to create, manipulate, forecast, and document timely controls on work flow. Involves interacting with work flow characteristics and solving work flow problems using IMAN Product Structure, Cascade Release, and Change Management functions. F (30-0)

MDA 314 Graphics Program 2.4 Sem Hrs
Prerequisite: MDA 211 or concurrent. Executes computer programs in the GRIP graphics language. Executes graphics language components as well as protocols to help automate program writing, editing, data interrogation, user interfaces, database organization, and the design process. F (36-0)

MDA 315 Design Practice 2 Sem Hrs
Prerequisite: MDA 205, MDA 305, MDA 312, MDA 313., (or may be taken concurrently) and MDA 314. Engages the student in two of the three phases of the design process: idea and task statements, and concurrent design refinements. Includes making idea sketches, writing research reports and functional specifications, and using a computer graphic system to make engineering drawings, bill of materials, and a presentation illustration. Produces on original design or design modification. F (30-0)

MDA 321 Advanced Part Modeling 3 Sem Hrs
Prerequisite: MDA 315. Practices strategies to improve modeling efficiency through parametric application of design requirements, part and master libraries, assembly modeling, and shape blends. Includes part changes by issuing replacement constraints or expressions. W (45-0)

MDA 323 Free Form Modeling 3 Sem Hrs
Prerequisite: MDA 321 and CIS 128. Defines contoured free-form shapes (non-prismatic) using UNIGRAPHICS. Includes model creation and edit methods such as spline, surface, solids, parametric, and retrofit techniques. Includes curvature analysis, irregularity detection and correction, and suitability for manufacture considerations. W (45-0)

MDA 325 Assembly Modeling 3 Sem Hrs
Prerequisite: MDA 321 or concurrent. Introduces concurrent methods to create and maintain orderly control of revisions, component and assembly arrays, part families, standards, and product manufacturing cycles. Practices tactics to constrain the size, position, and mating conditions of related parts. Introduces time reduction methods to edit, perform fit analysis, and manipulate large assembly arrays. (45-0)

MDA 327 Design Drafting**3 Sem Hrs**

Prerequisite: MDA 323 or concurrent and MDA 325. Provides instruction and practice with UNIGRAPHICS part drafting and assembly working drawing techniques. Uses 3-D prismatic and free-form models as the basis of parts to be transformed into orthographic, section, and auxiliary views which are then ANSI annotated with appropriate dimensions, tolerancing symbols, and text. Produces an original multi-sheet working drawing to include: detail, assembly, part list, and exploded pictorial assembly. W (45-0)

MANUFACTURING TECHNOLOGY COURSES

MFG 111 Manufacturing Processes**3 Sem Hrs**

Teaches the fundamentals of engineering materials and manufacturing processes, and how they interrelate in the design of products. (45-0)

MFG 290-299 Special Projects in Manufacturing Technology O

MACHINE TOOL OPERATIONS COURSES

MS 101 Machine Shop I**4 Sem Hrs**

Prerequisite: Admission to the Machine Tool Operation Program. An orientation to the machine tool operation and machining industry. Emphasis will be placed on shop and industrial safety. Non-precision, precision measurement and basic layout are also included. (0-100)

MS 102 Machine Shop II**4 Sem Hrs**

Prerequisite: MS 101. Designed to develop skills in using basic hand tools, selecting speeds and feeds on metal cutting machines, and selecting and applying cutting fluids. Basic instruction in the operation of metal saws is included. (0-100)

MS 103 Machine Shop III**4 Sem Hrs**

Prerequisite: MS 101. Designed to provide basics of engine Lathe operation including; turning, facing, boring, and threading with emphasis on machine operations. (0-100)

MS 104 Machine Shop IV**4 Sem Hrs**

Prerequisite: MS 101. The set-up and operation of a vertical and horizontal milling machine with emphasis on safety, cutter selection and accuracy. (0-100)

MS 105 Machine Shop V**4 Sem Hrs**

Prerequisite: MS 101. The set-up and operation of sensitive, upright and racial arm drilling machines. Selection and use of carbide tolling also covered. (0-100)

MS 106 Machine Shop VI**4 Sem Hrs**

Prerequisite: MS 101. The operation and set-up of surface grinders and drill grinding machines. Grinding wheel selection and safety also included. (0-100)

MS 107 Machine Shop VII**4 Sem Hrs**

Prerequisite: MS 101 and 103. Advanced engine lathe operations including form turning, acme threading, internal threading and faceplate set-up. (0-100)

MS 108 Machine Shop VIII**4 Sem Hrs**

Prerequisite: MS 101, 102 and 106. Set-up and operation of the tool and cutter grinder, cylindrical grinder and internal grinder. Emphasis on close tolerance control. (0-100)

MS 109 Machine Shop IX**4 Sem Hrs**

Prerequisite: MS 101. Application of advanced measurement and inspection techniques using electronic equipment and gage blocks. Covers both linear and angular measurement, basic tool making techniques and advanced milling techniques. (0-100)

MS 112 Ferrous Heat Treatment**2 Sem Hrs**

Designed to acquaint students with various forms of heat treatment applied to plain carbon steels, cast iron, alloy tool steels and stainless steel. Course will also include steel classification and machinability. (30-0) WD

MS 113 Machining Processes**2 Sem Hrs**

Course designed to familiarize students not majoring in the machine trade in the use and application of tool room machines. Student gains limited skills in use of lathes, drills, mills, instruments, grinders, and saws. (15-45) O

MS 120 Machinist's Handbook**2 Sem Hrs**

Emphasis on locating and applying information found in the Machinery Handbook. The use of mathematical formulae and tables will be covered. (30-0) WD

MS 210 Machine Shop X**4 Sem Hrs**

Prerequisites: MS 102, MS 104 and MS 109. The operation of the DeVlieg jig mill including: machine set-up, basic operations, operator responsibilities and safety. (0-100) O

MS 211 Machine Shop XI**4 Sem Hrs**

Prerequisite: MS 210. The operation of the Anilam Commando control in conjunction with the DeVlieg jig mill including: basic features, programming, and programmed machining using all available features. (0-100) O

MS 212 Machine Shop XII**4 Sem Hrs**

Prerequisite: MS 106 and 108, or Permission of instructor. The operation of the Moore jig grinder including: safety, operator responsibilities, hole grinding, radius grinding and bottom grinding. (0-100) O

MS 290-299 Special Projects in Machine Tool Operations O

MECHANICAL TECHNOLOGY COURSES

MT 110 Machine Tool Calculations**4 Sem Hrs**

Satisfies the mathematical needs of tradespeople and technicians in the machine tool and drafting fields. Covers whole numbers, fractions, decimals, metric conversions, precision instruments, ratio and percent, algebra, applied geometry, shop trigonometry, tapers, gears, belt and chain speeds, cutting speeds, and screw threads. (60-0)

MT 125 Pre-Apprenticeship Mechanics**3 Sem Hrs**

Study of physical principles as they relate to everyday work experiences. Space visualization, simple machine elements, forces on structures and bodies in motion, fluids at rest and in motion, heat and electricity. Designed as a course in pre-apprenticeship training program, but open to anyone desiring a basic understanding of mechanical principles. (45-0) O

MT 150 Mechanical Principles in Electronic Design²**2 Sem Hrs**

Prerequisites: MTH 113 and PHY 101 or 111. Investigates the application of mechanical, fluid and thermal principles to the electronics industry. Through demonstrations, becomes familiar with machine and mechanical drive elements, dynamics and vibrations, material properties, instrumentation, hydraulics and pneumatics, and heat transfer and thermal expansion. (30-15)

MT 191 Machine Controls I**3 Sem Hrs**

Designed for the student with a mechanical background who needs the essentials for diagnosing the control panel of production machinery. Combines the fundamentals of AC/DC circuits and the theory of hydraulics as they are used in basic machine control mechanisms. (45-0) O

MT 192 Machine Controls II**3 Sem Hrs**

Prerequisite: MT 191. Special emphasis placed on diagnostic troubleshooting techniques. Primary objective of the course is to enable maintenance personnel to discuss machine functions (or malfunctions) with machine and control system designers. The course will also benefit toolmakers and machine builders to understand the overall operation of the complex machinery they build or assemble. (45-0) O

MT 220 Introduction to Fluid Power 3 Sem Hrs
Prerequisite: MTH 111 or MTH 119. Focuses on the operation and function of fluids, pumps, compressors, valves, cylinders, motors, filters, and other components used in the power and control of machine tools, construction and agricultural equipment. Uses algebraic formulas, charts, and graphic symbols for design and diagnosis of basic circuits. (30-30)

MT 221 Materials and Metallurgy 3 Sem Hrs
Prerequisites: MFG 111 and MTH 111 or higher. Introduces concepts necessary to the selection and specification of materials for making products and building structures. Presents and practices standard methods to characterize the physical and mechanical properties of metals, ceramics, polymers, and composite materials. Includes laboratory activities such as hardness testing, microscopy, heat treatments, phase transformation studies, and mechanical property measurements. (30-30)

MT 225 Electrohydraulic Servo Systems 2 Sem Hrs
Prerequisite: MT 220 or Permission of instructor. Presents industrial applications of electrohydraulic servo controls through classroom displays and demonstrations on servo trainer tables. Develops circuit print-reading/skills progressing from the electrical solenoid valve through the proportional valve and into closed loop systems using the electrohydraulic servo valve. (30-0)

MT 235 Energy Sources and the Environment 1 Sem Hr
Prerequisite: MTH 111 or instructor Permission. A study of the sources of energy, the means for converting these sources into useful work and the environmental implications of the energy conversion process. Predictions of future energy use. (15-0) O

MT 244 Mechanisms 2 Sem Hrs
Prerequisites: DRF 107 and PHY 111. Uses hand calculator, graphical and computer methods, to study mechanical motion concepts by calculating displacements, velocities and accelerations. Develops proficiency in the use of terminology; vectors; kinematic drawings; displacement drawings; displacement graphs; centros; displacement, velocity and acceleration analysis and cam motion calculations. Credit may be earned in MT 244 or MT 255 but not in both. (20-20)

MT 250 Statics and Strength of Materials 3 Sem Hrs
Prerequisites: PHY 101 and MTH 103. Studies forces acting on rigid bodies, including applications of these forces to practical design problems. Introduces and uses concepts of stress in tension, compression, torsion, and shear in various combinations. (45-0) W

MT 251 Statics and Dynamics 3 Sem Hrs
Prerequisites: PHY 111 and MTH 113. Studies statics and dynamics of mechanical systems by solving problems of small sub-systems using a calculator. Studies forced in 2-D and 3-D acting on particle systems and rigid bodies. Solves problems using the following concepts: equilibrium laws, centroids, center of gravity, moment of inertia. Uses 3 methods to study dynamics of motion - kinematics, work/energy and impulse/momentum. (45-0) F

MT 252 Strength of Materials 3 Sem Hrs
Prerequisites: MTH 211, MT 251, CAD 114, ENG 112 or ENG 113 and MT 221. Uses mathematical and computer methods, as well as Mohr's circle to determine stress, strain, load and deflection relationships for structure and machine elements. Uses machine components in tension, compression or shear, beams in bending or deflection, columns, and welded and riveted joints in design calculations. (30-30)

MT 255 Kinematics of Mechanisms 3 Sem Hrs
Prerequisites: PHY 101 or PHY 111 and DRF 107. Using hand calculator, graphical and computer methods, students study mechanical motion concepts by calculating displacements, velocities and accelerations. Become proficient in the use of terminology; vectors; kinematic drawings; displacement drawings; displacement graphs; centros; displacement velocity and acceleration analysis; cam motion calculations; spur gear sets and gear trains. Cannot receive credit for both MT 244 and MT 255. (30-30) FW

MT 256 Machine and Product Design 3 Sem Hrs
Prerequisites: MT 244 and MT 252. Uses hand calculator and computer methods to solve for the dimensions and allowable loads of machine elements and powertrains. Studies shafts, keyed and bolted couplings, bearings, gear trains, V-belt and chain drives, clutches and brakes, springs and fasteners. Uses Design for Assembly software for final design project. (30-30) S

MT 290-299 Special Projects in Mechanical Technology O

MATHEMATICS COURSES

Course prerequisites are stated in terms of Delta courses or the number of years of high school mathematics, and are intended to insure that students choose the appropriate mathematics course. Individuals may have a mathematics background equivalent to a stated prerequisite in which case they should consult a counselor for assistance in evaluating equivalencies. Any student who feels that circumstances warrant waiving a prerequisite should consult the Mathematics and Computer Science Division Chair for approval. It is recommended that a grade of "C" or better be earned in any mathematics course used as a prerequisite for another mathematics course.

MTH 100 Pre-Algebra Mathematics 2 Sem Hrs
Provides a foundation in arithmetic and a preparation for algebra. Covers four fundamental operations of positive and negative integers, fractions, and decimals. Includes percentages, the use of formulas, ratios, proportions, and applications. (30-0)

MTH 102 Basic Mathematics 2 Sem Hrs
Provides a foundation in arithmetic. Covers four fundamental operations of whole numbers, fractions, and decimals. Includes percentages, ratios, proportions, and applications. (30-0)

MTH 103 Applied Geometry and Trigonometry 4 Sem Hrs
Prerequisite: MTH 107 or 111. Geometry topics includes angles, triangles, polygons, circles, prisms, cylinders, and cones. Trigonometry topics include right-triangle trigonometry, radian measure, oblique-triangle trigonometry, and graphs of trigonometric functions. (60-0) E F W

MTH 106 Pre-Algebra 2 Sem Hrs
Prerequisite: MTH 102 or a score of 19 or higher on the numerical skills portion of ASSET. Provides preparation for algebra. Includes fractions, decimals, integers, ratios, and percentages with an introduction to equations, graphs, and functions. (30-0)

MTH 107 Algebra I 3 Sem Hrs
Prerequisite: MTH 100 or High school equivalent. Includes natural numbers, integers, first-degree equations and inequalities, special products, factoring, rational expressions and equations, graphs, and linear systems, exponents, and quadratic equations. (Equivalent to first-year high school algebra). (45-0)

MTH 109 Geometry 2 Sem Hrs
Prerequisite: MTH 107 or one year of high school algebra. Study of two and three dimensional nomenclature with emphasis on applications involving angles, triangles, parallelograms, congruency and similarity of polygons, circles, spheres, prisms, pyramids, and cones. Designed for those persons who have not had a high school geometry course and plan to take trigonometry or other advanced math courses. (30-0) DW

MTH 110 Mathematics for Elementary Teachers 4 Sem Hrs
Prerequisite: MTH 107 or one year of high school algebra. Includes numeration systems, sets and their properties, classification of number systems (whole numbers through real numbers), operations and their properties, arithmetical algorithms, problem solving, statistical charts and graphs, geometric figures and their calculations, and measurement systems including metric. Variety of learning styles, manipulatives, and calculator and computer application uses. The National Council of Teachers of Mathematics Standards are incorporated. (60-0)

MTH 111 Applied Algebra 4 Sem Hrs
Prerequisite: MTH 107 or one year of high school algebra. Recommended: A grade of "B" or better in algebra; MTH 109 advisable. Applications oriented for the technical student. Includes basic algebraic operation, linear equations, functions, graphing, determinants, exponents and radicals, quadratic equations, ratio, proportion and variation, common logarithms, and exponential equations. (60-0) F W

MTH 113 Applied Trigonometry 4 Sem Hrs
Prerequisite: MTH 111 or MTH 119 or two years of high school algebra. Recommended: A grade "B" or better in algebra. Application oriented for the technical student. Includes trigonometric functions with their graphs, solution of triangles, vectors, complex numbers, conics, inverse trigonometric functions, and trigonometric identities and equations. A CALCULATOR HAVING AT LEAST TRIGONOMETRIC AND INVERSE TRIGONOMETRIC FUNCTIONS IS REQUIRED. (60-0)W

MTH 116 Mathematics for Elementary Teachers II 3 Sem Hrs
Prerequisite: MTH 110. Investigates problem solving, classification of number systems (whole numbers through real numbers), their operations and properties, statistical charts and graphs, geometric figures, and measurement systems including metric. Reviews fractions, decimals, percents and algebra. Includes a variety of learning styles using manipulatives, calculators and computer applications are utilized. Credit may be earned in MTH 110 or MTH 115 and MTH 116 but not both. The National Council of Teachers of Mathematics standards are incorporated. (45-0)

MTH 117 Math Allied Health 2 Sem Hrs
Prerequisite: MTH 102 or equivalent arithmetic skills. Reviews Roman numerals, fractions, decimals, percentages, and ratios. Includes a study of the metric system and the Apothecaries' system with applications in converting from one system to another. Emphasizes calculations involved in preparing solutions and giving medications. (30-0)

MTH 119 Intermediate Algebra 4 Sem Hrs
Prerequisite: MTH 107 or one year of high school algebra. Recommended: A grade of "B" or better in algebra. Includes fundamental concepts of algebra and applications, equation solving, graphs, systems of linear equations, quadratic equations, algebraic fractions, exponents, radicals, functions, and logarithms. A GRAPHING CALCULATOR IS REQUIRED. (60-A)

MTH 120 Finite Mathematics 3 Sem Hrs
Prerequisite: MTH 119 or two years of high school algebra. Topics include mathematical modeling (polynomial and rational functions; their graphs and applications; and arithmetic and geometric progressions), systems of equations and inequalities, linear programming, and an introduction to probability (binomial distributions and graphing qualitative data). Covers computer applications of some topics. A GRAPHING CALCULATOR IS REQUIRED. (Those students planning to take MTH 161 should take MTH 151 rather than MTH 120.) (45-0)

MTH 121 Plane Trigonometry 3 Sem Hrs
Prerequisite: MTH 119 or two years of high school algebra. Recommended: MTH 109 or another geometry course. Includes trigonometric functions and their graphs, solution of triangles, identities, trigonometric equations, inverse trigonometric functions, and complex numbers. A GRAPHING CALCULATOR IS REQUIRED. (45-0)

MTH 151 Pre-Calculus Mathematics 4 Sem Hrs
Prerequisite: MTH 119 and MTH 121 or three years of high school college-preparatory mathematics including trigonometry. MTH 121 may be taken concurrently with instructor approval. Designed for students planning to take calculus. Includes a study of the elementary functions, equations and inequalities, systems of equations, review of trigonometry, and analytic geometry. A GRAPHING CALCULATOR IS REQUIRED. (60-0)

MTH 153 Algebra For Calculus 3 Sem Hrs
Prerequisites: Two years of high school algebra and Permission of the instructor. Provides a review of algebra as related to calculus topics of limits, differentiation, and integration. (45-0)

MTH 160 Calculus for the Social and Managerial Sciences 4 Sem Hrs
Prerequisite: MTH 120 or 151 or a least three and a half years of high school-college preparatory mathematics. Designed to satisfy the mathematics requirements for students majoring in business or social sciences. Topics include graphing, differentiation and integration of functions (algebraic, exponential, and logarithmic), and the use of these techniques within business and economic models. A GRAPHING CALCULATOR IS REQUIRED. (60-0)

MTH 161 Analytic Geometry and Calculus I 4 Sem Hrs
Prerequisite: MTH 151 or four years of high school college-preparatory mathematics including trigonometry. Includes functions, graphs, limits, continuity, derivatives and their applications, integrals, as well as differentiation and integration of exponential and logarithmic functions. A GRAPHING CALCULATOR IS REQUIRED. (60-0)

MTH 162 Analytic Geometry and Calculus II 4 Sem Hrs
Prerequisite: MTH 161. Includes applications of integrals, integration techniques, limits and indeterminate forms, improper integrals, infinite series, polar coordinates, parametric equations, as well as differentiation and integration of trigonometric and hyperbolic functions. A GRAPHING CALCULATOR IS REQUIRED. (60-0)

MTH 208 Elementary Statistics 3 Sem Hrs
Prerequisite: MTH 119 or two years of high school algebra. Studies statistical concepts including frequency distributions, measures of central tendency and dispersion, probability, confidence intervals, hypotheses testing, linear correlation and regression, chi-square, ANOVA. A GRAPHING CALCULATOR IS REQUIRED. (45-0)

MTH 211 Applied Calculus 5 Sem Hrs
Prerequisite: MTH 113. Application oriented, for the technical student. Conics, differentiation and integration of algebraic, trigonometric, logarithmic and exponential functions. Emphasis on the application of the derivative and integral. (75-0) O

MTH 260 Discrete Mathematics 3 Sem Hrs
Prerequisite: MTH 161. Introduces discrete mathematics topics for applied mathematics and computer science. Includes Boolean algebra, predicate logic, sets, relations, introduction and recursion, counting theory, graphs and tree. (45-0)

MTH 261 Analytic Geometry and Calculus III 4 Sem Hrs
Prerequisite: MTH 162. Topics include solid analytical geometry, vectors, partial differentiation, multiple integration, line and surface integrals, and Green's and Stoke's theorems. (60-0)

MTH 263 Introduction to Linear Algebra 3 Sem Hrs
Prerequisite: MTH 261. Topics include matrices, determinants, linear systems, vector spaces, linear transformations, eigenvalues, and eigenvectors. (45-0)

MTH 264 Introduction to Ordinary Differential Equations 3 Sem Hrs
Prerequisite: MTH 261. Topics include techniques for solving first and higher order linear differential equations, systems of linear differential equations, solutions using power series, and introductions to numerical methods and Laplace transforms. Applications in science and engineering will be used throughout the course. (45-0)

MTH 280-289 Restricted Enrollment Mathematics Courses

Courses offered at the request of various groups will enrollment limited to the specific request.

MTH 290-299 Special Projects in Mathematics O

MUSIC COURSES

MUS 100 Elements of Music

3 Sem Hrs

Rudiments of music, including notation, clefs, keys, syllables, and rhythm. Elementary conducting technique. Planned to meet the basic musical needs of prospective elementary teachers. Also is a basic course in beginning theory for anyone interested in music. Recommended to be taken concurrently with MUS 131. (45-0)

MUS 101 Theory--Basic Music I

5 Sem Hrs

A comprehensive course for potential music majors, minors, or others electing the course seeking a base for professional development. Suitable for those with previous knowledge of keys, notation, rhythm and clefs. Five weeks of intensive training in fundamentals of music theory followed by aural theory, written theory and keyboard harmony. (75-0) F

MUS 102 Theory--Basic Music II

5 Sem Hrs

Prerequisite: MUS 101. Continuation of MUS 101, with an emphasis on writing, chord progressions, form, ear-training and keyboard skills. (75-0) W

MUS 111 Music Appreciation I

3 Sem Hrs

Provides fundamentals of listening to and understanding of instrumental music (concerto, small ensemble). Presents basic principles for discussion as they relate to a variety of examples from classical, folk, and pop styles. (45-0)

MUS 112 Music Appreciation II

3 Sem Hrs

Prerequisite: MUS 111 or Permission of instructor. Continued study of instrumental music (concerto small ensemble). Promotes an understanding of and for vocal forms (Opera, art, song, large choral work, i.e., oratorios, masses). (45-0) FW

MUS 117 Music in Liturgy

1 Sem Hr

A practical approach to planning liturgies and services. Will cover practices, history, and resources for several major religions. (15-0) W

MUS 131 Piano I

2 Sem Hrs

Beginning class instruction leading to the ability to play melodies and accompanying chord patterns and rhythms. (15-15) FW

MUS 132 Piano II

2 Sem Hrs

Prerequisite: MUS 131 or Permission of the instructor. Continuation of Piano I. (15-15) O

MUS 133 Piano III

2 Sem Hrs

Prerequisite: MUS 132 or Permission of instructor. Continuation of Piano II. (15-15) O

MUS 135 Guitar I

2 Sem Hrs

Tuning is covered in three ways: the basic chords in first position, the basic strums, and the finger styles. The chords and the right hand styles are applied to both popular and traditional music. Students will be expected to provide their own instruments. (0-30) FW

MUS 136 Guitar II

2 Sem Hrs

Prerequisite: MUS 135 or Permission of instructor. A continuation of Guitar I which covers chords in higher positions, including bar chord and chord forms. Popular music is used extensively, along with short classical and flamenco pieces. Students will be expected to provide their own instruments. (0-30) W

MUS 138 Music Voice Class

2 Sem Hrs

Studies breathing, resonance, diction and interpretation of various styles of vocal music. (30-0) W

MUS 139 Keyboard Practicum

2 Sem Hrs

Prerequisites: MUS 100 and MUS 131 and Permission of instructor. Designed to develop specific musical skills as well as sensitivity to ensemble performance. Literature will represent all historical periods and styles in both the secular and sacred genres. Sight reading, transposing, harmonizing, improvising and modulating will be stressed as they relate to specific needs to accompanists. (30-0) O

MUS 140 Introduction to MIDI Technology

3 Sem Hrs

Prerequisite: MUS 100. Presents Music Instrument Digital Interface electronic technology. Emphasizes creating and manipulating sounds and musical sequences with computers and MIDI capable keyboards and sound modules. Requires a musical project using this technology. (45-0) FW

MUS 145 Elements of Conducting

2 Sem Hrs

Instruction in baton technique and basic choral conducting procedures. Experience in actual conducting--both instrumental and vocal. Practice in score reading and study of transposing instruments. Investigation of problems of intonation, balance, ensemble, tempo and tone quality as encountered in rehearsal. The class itself will be used as a performing group in teaching the above whenever possible. In some instances, recordings will be used to illustrate certain points. (30-0) O

MUS 150 Ensemble Experience I

1 Sem Hr

May be taken to document choral ensemble activity in groups other than Delta College credit granting choirs. Approval of instructor required before participation. Approve documentation must be submitted to instructor at the end of semester's activity. (30-0) FWS

MUS 151 Ensemble Experience II

1 Sem Hr

Prerequisite: MUS 150. May be taken to document choral ensemble activity in groups other than Delta College credit granting choirs. Approval of instructor required before participation. Approved documentation must be submitted to instructor at the end of semester's activity. (30-0) FWS

MUS 154 Choir I

1 Sem Hr

Previous high school and/or church choir experience is recommended. Directed toward the study of representative choral music and public performances in college and community activities. Additional choir in sequence: MUS 155, 254, 255. (0-45) FW

MUS 155 Choir II

1 Sem Hr

Continuation of Choir I. (0-45) FW

MUS 156 Jazz Choir I

1 Sem Hr

Prerequisite: Audition/Permission prior to semester registration. performance group specializing in vocal jazz. Solo, small group, and ensemble numbers will be performed by members. Other idioms, such as blues, rock, and theater pieces will also be performed. (0-45) FW

MUS 157 Jazz Choir II

1 Sem Hr

Continuation of MUS 156. (0-45) FW

MUS 167 Flute Choir

1 Sem Hr

Prerequisite: Two years of band experience or equivalent. Consultation with the director will determine eligibility for the group with regard to the inclusion of additional wind or string instruments. (0-30) O

MUS 168 Gospel Choir I

1 Sem Hrs

Specializes in the familiarization with and the performance of Gospel and soul music both on and off campus. (30-0) FW

MUS 201 Theory-Basic Music III

4 Sem Hrs

Prerequisite: MUS 102 or Permission of instructor. Second-year music theory for music majors involving sophomore level aural and written theory with keyboard. (60-15)

MUS 202 Theory-Basic Music IV

4 Sem Hrs

Prerequisite: MUS 201. Second-year music theory for music majors involving sophomore level aural and written theory with keyboard. (60-15) W

MUS 211 Music History I 3 Sem Hrs
Prerequisite: MUS 112 or Permission of instructor. An in-depth study of music of ancient times to the Seventeenth Century. Required for music majors. (45-0) F (every two years)

MUS 212 Music History II 3 Sem Hrs
Prerequisite: MUS 112 or 211 or Permission of instructor. A continuation of Music 211 with a study of music from the Seventeenth Century to present with emphasis on form and style. Required for music majors. (45-0) W (every two years)

MUS 231 Techniques and Materials of Piano 3 Sem Hrs
Prerequisite: one year theory or Permission of instructor. This course concentrates specifically on the problems of developing strong piano techniques representative of beginning into intermediate piano study. In addition to the texts, the literature of the piano will also be studied extensively. (45-0) F

MUS 254 Choir III 1 Sem Hr
Continuation of Choir II. (0-45) FW

MUS 255 Choir IV 1 Sem Hr
Continuation of Choir III. (0-45) FW

MUS 256 Jazz Choir III 1 Sem Hr
Continuation of MUS 157. (0-45) FW

MUS 257 Jazz Choir IV 1 Sem Hr
Continuation of MUS 256. (0-45) FW

MUS 267 Flute Choir II 1 Sem Hr
Prerequisite: MUS 167 and two years of band experience or equivalent. Continues development of musical skills through performance on a variety of flutes. (30-0)

MUS 268 Gospel Choir II 1 Sem Hr
Prerequisite: MUS 168. Continues development of specialized performance practices of Gospel and Soul music. (30-0)

MUS 289 Applied Sacred Music Capstone 2 Sem Hr
Prerequisite: Permission of program director required. Capstone activities include a jury in area of emphasis, as well as demonstration of competence in all areas of previous certificate course work, and non-credit activities. (30-0) FW

ALL APPLIED MUSIC COURSES. Prerequisite: Permission of music department. Private instruction/lessons provided and a minimum number of hours of weekly practice is required. A jury examination will be held at the end of each semester.

MUS 171 Applied Music Piano Minor--Freshman 1 Sem Hr O

MUS 172 Applied Music Piano Minor--Freshman 1 Sem Hr O

MUS 271 Applied Music Piano Minor--Sophomore 1 Sem Hr O

MUS 272 Applied Music Piano Minor--Sophomore 1 Sem Hr O

MUS 173 Applied Music Instrumental Minor Freshman 1 Sem Hr O

MUS 174 Applied Music Instrumental Minor Freshman 1 Sem Hr O

MUS 273 Applied Music Instrumental Minor Sophomore 1 Sem Hr O

MUS 274 Applied Music Instrumental Minor Sophomore 1 Sem Hr O

MUS 175 Applied Music Voice Minor Freshman 1 Sem Hr O

MUS 176 Applied Music Voice Minor Freshman 1 Sem Hr O

MUS 275 Applied Music Voice Minor Sophomore 1 Sem Hr O

MUS 276 Applied Music Voice Minor Sophomore 1 Sem Hr O

MUS 181 Applied Music Piano Major Freshman 2 Sem Hr O

MUS 182 Applied Music Piano Major Freshman 2 Sem Hr O

MUS 281 Applied Music Piano Major--Sophomore 2 Sem Hr O

MUS 282 Applied Music Piano Major--Sophomore 2 Sem Hr O

MUS 183 Applied Music Instrumental Major Freshman 2 Sem Hr O

MUS 184 Applied Music Instrumental Major Freshman 2 Sem Hr O

MUS 283 Applied Music Instrumental Major Sophomore 2 Sem Hr O

MUS 284 Applied Music Instrumental Major Sophomore 2 Sem Hr O

MUS 185 Applied Music Voice Major--Freshman 2 Sem Hr O

MUS 186 Applied Music Voice Major--Freshman 2 Sem Hr O

MUS 285 Applied Music Voice Major--Sophomore 2 Sem Hr O

MUS 286 Applied Music Voice Major--Sophomore 2 Sem Hr O

MUS 290-299 Special Project in Music O

NURSING ASSISTANT/HOME HEALTH AIDE COURSE

NHA 111 Nursing Assistant/Home Health Aide 9 Sem Hrs
Theory and clinical experience opportunities designed to prepare students to work with patients in long-term/acute-care facilities and home health care agencies. Upon completion of course, students will be eligible to take competency evaluation tests (written and skills) leading to state certification as a Nursing Assistant (75-180) D

NHA 290-299 Special Projects in Nursing Assistant/Home Health Aide O

NURSING COURSES

NUR 100 Introduction to Health Care: Nursing 2 Sem Hrs
Discusses the role, functions and responsibilities of nurses as members of the health care team. Includes nursing history, current aspects of health care and legal/ethical issues, and introduces biopsychosocial, cultural health, illness and prevention concepts. Includes dosage and solution computations and recognition of medical abbreviations. Requires MTH 107 or equivalent skills. (30-0)

NOTE: The following courses are subject to the Nursing Progression and Retention Policies.

NUR 101A Nursing Fundamentals 5 Sem Hrs
Prerequisite: Current validation for RN program. Introduces the role of professional nursing practice based upon principles of the biological and social sciences. Identifies legal and ethical aspects of nursing practice. Emphasizes specific concepts and nursing process as the framework for nursing diagnosis and practice skills. Includes opportunities to practice specified nursing clinical skills and/or procedures in a simulated laboratory setting. (53-75)

NUR 101B Care of the Elderly Adult 4 Sem Hrs
Prerequisite: NUR 101A. Introduces concepts of gerontological nursing. Emphasizes the application of nursing process and nursing diagnoses in the clinical laboratory setting. Provides opportunities to practice basic clinical nursing skills and techniques in the care of older adults in a variety of environments and health care settings. (37-93)

NUR 115 Maternity Nursing 3 Sem Hrs
Prerequisite: Completion of NUR 101B or NUR 162. Presents nursing care of the childbearing family. Focus on distinguishing normal from abnormal conditions and interventions to promote a safe, satisfying childbirth experience. Provides clinical opportunities to employ the nursing process in selected health care settings. Credit can be earned in NUR 115 or NUR 105, but not both. (25-65)

NUR 116 Pediatric Nursing 3 Sem Hrs
Prerequisite: Completion of NUR 101B or NUR 162. Presents nursing care of the child and family experiencing illness/hospitalization. Emphasizes on principles of growth and development, and bio-psycho-social needs of clients from infancy through adolescence. Provides clinical opportunities to employ the nursing process in selected health care settings. Credit can be earned in NUR 116 or NUR 106, but not both. (25-65)

NUR 119 Mental Health Nursing 3 Sem Hrs
Prerequisite: NUR 101B or NT163. Provides opportunities in selected health care/mental health agencies, to apply pertinent theory and nursing intervention skills to care for clients and families experiencing emotional distress. Credit can only be earned in NUR 119, or NT 219, or NUR 209. (20-75)

NUR 120 Medication Administration 2 Sem Hrs
Presents an overview of drug classifications, dosages and responsibilities of administration of prescribed and "over-the-counter" medications. Includes content for those entering health occupation programs or for consumers seeking information regarding medications. (30-0)

NUR 125 Strategy For Success 2 Sem Hrs
Prerequisite: Current validation for RN nursing program. Identifies potential barriers to success in nursing programs. Provides strategies and skills to enhance success. Emphasizes critical thinking, problem-solving, conceptual thinking, and study skills related to reading, writing and test taking. Includes time management, stress reduction, learning styles, communication skills and building self-esteem techniques. (30-0)

NUR 240 Basic Nursing Care of the Adult Client 9 Sem Hrs
Prerequisite: NUR 115, 116, 119 with a minimum grade of "C" (2.0). Emphasizes basic nursing care of the adult client. Includes commonly occurring medical or surgical health care problems related to sensory and motor function, gas exchange and transportation of substances to and from the cells, alterations in endocrine, musculoskeletal, immunologic, genitourinary, gastrointestinal, gynecological, integument and neurologic function. (75-180)

NUR 241 Human Sexuality in Health Care 2 Sem Hrs
Designed primarily for individuals who have had experience and/or education in a health care field. Focus upon characteristics of human sexuality through the life cycle. Designed to increase health care workers' sensitivity, comfort and clinical skills when dealing with the various aspects of sexuality in therapeutic situations. (30-0)

NUR 250 Nursing Care and Management Throughout the Health Continuum 9 Sem Hrs
Prerequisite: Completion of NUR 209 with a grade of "C" (2.0) or better. Emphasizes concepts, principles, and content related to the delivery of nursing care to clients experiencing multiple acute/chronic health problems. Provides opportunities to use nursing process, nursing diagnostic, and complex decision making skills in a variety of health care settings. Includes concepts related to professionalism and changing health care delivery systems. Explores the change in role from student to graduate nurse. (45-270)

NUR 282 Major Health Problems of Older Adult 2 Sem Hrs
Prerequisite: Open to licensed nurses/student nurses/other health care personnel or permission of instructor. Focuses on major health problems identified as critical for the frail elderly in the health care system. Mobility impairment, sensory losses, confusion, incontinence, activity intolerance, and the effects of diminished social support systems will be covered. Emphasis will be on nursing interventions which promote the highest possible level of independent function and wellness. (30-0)

NUR 285 Pharmacology: A Nursing Perspective 4 Sem Hrs
Prerequisites: Completion of BIO 132 and MTH 117 with a minimum grade of C (or equivalent skills). Presents the basic foundation of pharmacology. Offers drug information in group classification format and includes drug indications, action, contraindications, side effects, implications for administration, and related client/family teaching. Integrates anatomy and pathophysiology, microbiology on drug administration concepts. Student needs an understanding of algebra and calculation of dosages. (60-0)

NUR 290-299 Special Projects in Nursing O

NURSING TRANSITION COURSES

NT 161 Transition - Basic Principles of Adult Care 2 Sem Hrs
Prerequisite: LPN Licensure, 1 year full time-equivalent work experience and validation for nursing program. Utilizes nursing process as the framework for learning basic nursing concepts. Solidifies knowledge related to aseptic technique, nutritional requirements, medication administration, fluid and electrolyte regulation and acid-base balance. Credit may be earned in NUR 161 or NT 161 but not both. (30-0)W

NT 162 Role and Function of the RN 2 Sem Hrs
Discusses the role and function of the registered nurse, including history of nursing, nursing theorists and social policy. Emphasizes communication and math skills, ethical and legal implications for nursing, educational preparation for various nursing roles, image of nursing, political action, theories and models of practice, teaching/learning principles, concepts of ethnic and cultural diversity. Credit may be earned in NUR 162 or NT 162 but not both. (30-0)W

NT 163 Advanced Principles of Adult Care for the LPN 5 Sem Hrs
Prerequisite: NT 161 and NT 162 with a grade of "C" (2.0). Applies nursing process to the care of the adult patient. Studies occurring health care problems related to sensory and motor function, gas exchanges, transportation of substances to and from the cells, alterations in endocrine, musculoskeletal, immunologic and neuro function. Credit may be earned in NUR 163 or NT 163 but not both. (45-90)S

NT 215 Transition-Maternity Nursing 3 Sem Hrs
Prerequisite: NT 163 with a grade of "C" or better. Presents nursing care of the childbearing family. Focuses on distinguishing normal from abnormal conditions and interventions to promote a safe, satisfying experience. Provides clinical opportunities to employ the nursing process in selected health care settings. Credit may be earned only NT 215, NUR 105, NUR 115, or NUR 164. (20-75)F

NT 216 Transition-Pediatric Nursing 3 Sem Hrs
Prerequisite: NT 163 with grade of "C" (2.0). Presents nursing care of the child and family experiencing illness/hospitalization. Emphasizes principles of growth and development, and bio-psycho-social needs of clients from infancy through adolescence. Provides clinical opportunities to employ the nursing process in a variety of health care settings to best meet the learning needs of the transition student. Credit may be earned only in NT 216, NUR 106, NUR 116, or NUR 164. (20-75)F

NT 219 Transition-Mental Health Nursing 3 Sem Hrs
Prerequisite: NT 163 with grade of "C" (2.0). Provides opportunities, in selected health care/mental health agencies, to apply pertinent theory and nursing intervention skills to care for clients and families experiencing emotional distress. Credit may be earned only in NT 219, NUR 209, or NUR 119. (20-75)F

NT 290-299 Special Projects in Nursing Transition O

OFFICE SYSTEMS EDUCATION COURSES

OSE 105 Time Management 1 Sem Hr
Develops skills in time management. Begins with a Franklin-Covey TimeQuest seminar in personal time management. Includes a follow-up seminar focusing on time management skills and electronic scheduling. (15-0)

OSE 108 Personal Keyboarding 1 Sem Hr
Introduces the touch system of keyboarding and basic word processing functions, features, and commands necessary to produce letters and reports on the computer. Outside lab assignments are required. (15-0) O

OSE 116 Introduction to the Medical Office 2 Sem Hrs
Introduces the pegboard system including day sheets, patient ledgers and receipts; emphasizes the accurate recording of charges, payments and adjustments. Also introduces basic accounting procedures including journalizing, posting, banking, payroll, and preparation of the income statement and balance sheet. (30-0) FWD

OSE 145 Integrated Office Systems 4 Sem Hrs
Prerequisite: OSE 170 or demonstrated typing skill. Office systems technology will be introduced through the study of terminology, employee roles, electronic equipment, office environments, and electronic office procedures. Integrated office applications will be studied through the use of word processing, database, spreadsheet and operating system software. Projects are assigned on microcomputers. (60-0) FW

OSE 150 Business English 2 Sem Hrs
Emphasizes the development of sound English usage skills. Emphasizes language skills that will enable students to perform effectively and efficiently in an information-based work environment. (45-0)

OSE 151 Business Communication I 3 Sem Hrs
Prerequisite: OSE 150 or satisfactory assessment testing score. (40 or higher on ASSET; 65 or higher on COMPASS) Includes principles and composition of effective basic business letters and memos as well as accuracy in grammar, spelling, punctuation, sentence structure, and format. Keyboarded assignments are required. (45-0)

OSE 152 Business Communication II 3 Sem Hrs
Prerequisite: Business Communication I (OSE 151). Studies effective verbal and nonverbal communication in business. Emphasis placed on audience reaction, logical organization, tone, clarity, and accuracy. Involves career information, the research process, and reporting. (45-0)

OSE 153 Police Report Writing 1 Sem Hr
Prerequisite: Concurrent enrollment in CJ 101, LWT 175, and LW 280. Requires a grade of "C" (2.0) or better to complete the Basic Police Training Academy. Develops and enhances writing skills necessary to law enforcement including preparation of police reports, incident reports, summaries of witness and complaint interviews, and criminal case summaries. (15-0)

OSE 155 Editing 2 Sem Hrs
Prerequisite: OSE 151 and OSE 171 or demonstrated typing skills. Develops proofreading and editing skills. Reviews business writing principles and the use of revision symbols. Emphasizes revising both format and content of business documents. (30-0)

OSE 157 Filing 2 Sem Hrs
Prerequisite: OSE 170 or equivalent. Covers principles and practices of effective records management for manual and automated records systems using alphabetic, numeric, chronologic, and subject methods. Introduces database concepts needed for understanding automated records storage and retrieval methods including adding, modifying, sorting, designing, searching, and printing. (30-0)

OSE 158 Records Management 3 Sem Hrs
Prerequisite: OSE 171 or demonstrated keyboarding skill. Includes the complete records cycle, development of filing procedures, operations and records control, centralized and decentralized systems, cost analyses, selection of equipment and supplies, forms control, micrographics, automated information management, records management career opportunities, electronic storage, retrieval, and printing. (45-0) F in odd-numbered years only.

OSE 166 Office Externship 3 Sem Hrs
Prerequisite: Minimum 25 credits completed in Administrative Assistant program. Student must apply for placement in OSE 166 in semester previous to anticipated placement. Integrates and reinforces the student's academic studies with related work of at least 150 hours at a designated work site. Seminars will be held on campus as a forum of discussion for career enhancement. (15-150)

OSE 170 Keyboarding 2 Sem Hrs
Develops the touch system of the alphabetic, numeric, symbol keys and the 10-key pad of the microcomputer keyboard. Provides individualized arrangement for students with physical limitations. (30-0)

OSE 171 Document Processing: Beginning 3 Sem Hrs
Prerequisite: OSE 170 with C (2.0) grade minimum or keyboarding skill. Provides skill improvement, introduction to current business letter and report styles, and basic formatting skills of page layout, centering, tabs, and multi-page documents using the microcomputer. Before advancing to OSE 172, students may need to take a skill building course, e.g. OSE 178 or OSE 179. (45-0)

OSE 172 Document Processing: Intermediate 3 Sem Hrs
Prerequisite: OSE 171 (which utilizes beginning WordPerfect for Windows) or equivalent. Develops speed and accuracy in producing business and personal letters, rough drafts, manuscripts, outlines and tables using a microcomputer. (45-0)

OSE 175 Electronic Calculation 2 Sem Hr
Prerequisite: MTH 102 or appropriate assessment score. Develops the touch system of data entry for addition and incorporates the functions of addition, subtraction, multiplication, and division for various business applications using electronic calculating tools. (30-0)

OSE 178 Keyboard Skillbuilding I 2 Sem Hrs
Prerequisite: OSE 170 or equivalent. Emphasizes the development of keyboarding speed and accuracy using the Cortez Peters Championship Typing program. For students with keyboarding experience and/or skill up to 45 wpm. May be taken concurrently with OSE 171--Document Processing: Beginning or OSE 172--Document Processing: Intermediate. Outside lab assignments are required. (30-0)

OSE 179 Keyboard Skillbuilding II 2 Sem Hrs
Prerequisite: OSE 171 or equivalent. Emphasizes the development of keyboarding speed and accuracy using the Cortez Peters Championship Typing program. For students typing 45 or more words per minute. May be taken concurrently with OSE 172--Document Processing: Intermediate or OSE 273--Document Processing: Advanced. Outside lab assignments are required. (30-0)

OSE 192 WordPerfect for Windows: Beginning 1 Sem Hrs
Prerequisite: OSE 170 or equivalent. Introduces the WordPerfect for Windows word processing program. Students will create, format, save, retrieve, edit, and print documents. (15-0)

OSE 193 WordPerfect for Windows: Intermediate 2 Sem Hrs
Prerequisite: OSE 192 or equivalent or permission of instructor. Further develops the practical working knowledge of WordPerfect for Windows software. Refines formatting and focuses on page layout and design. (30-0)

OSE 194 Microsoft Windows 95 1 Sem Hr
WINDOWS 95 provides the computer user with the means to view several programs at one time; transfer information between programs; and merge compatible documents from different programs through the use of drop-down menus, icons, dialog boxes, title/menu bars. (15-0) FW

OSE 195 Desktop Publishing - PageMaker 2 Sem Hr
Prerequisite: Ose 170 and a thorough working knowledge of at least one word processing software package or equivalent. Provides the student with an electronic tool to completely design a finished document. Emphasizes page design with text/graphics merging. Utilizes Windowing environments (Microsoft & PageMaker) and the mouse system. Examines desktop publishing principles (including a historical perspective) as well as pre-press operations. Analyzes similarities and differences between word processing and desktop publishing. Outside lab assignments are required. (30-0)

OSE 197 Page Layout/Design 2 Sem Hrs
Prerequisite: OSE 195 or equivalent (all with a minimum grade of C or 2.0). Provides advanced skills in desktop publishing emphasizing page layout and design. Students will produce, manage, and save graphic images using graphic drawing/painting, clipart and scanning programs; will explore scanning and manipulation of photographs; and will learn gray scale reproduction techniques. Outside lab assignments will be required. (30-0) W

OSE 198 Corel Draw 2 Sem Hrs
Prerequisites: OSE 195 (with a minimum grade of "C"). Develops beginning/intermediate skills in graphic creation and manipulation for business and education. Includes drawing geometric and free form images as well as enhancing imported graphics and altering/enhancing existing clip art, scanned photos, etc. Emphasis is on the development of professional and effective visuals for newsletters, pamphlets, letters, reports, etc. (30-0) F

OSE 201 Presentation Graphics Using PowerPoint 2 Sem Hrs
Prerequisite: Knowledge of Windows Operating System. Develops beginning/intermediate skills in presentation and graphic layout for business and education presentations. Includes computer projection and creation of computer generated transparencies and handouts. Focuses on developing attractive, professional, effective, and well-timed visuals for different business settings using computer graphic presentation software. Credit may be earned in either CIS 201 or OSE 201 but not both. (30-0)

OSE 202 MM II: Advanced Presentation Graphics 2 Sem Hrs
Prerequisites: OSE/CIS 201 or equivalent. Develops advanced skills in professional electronic presentations by incorporating video/sound clip files, animation sequences, voice overs, and explores gray scale and 24-bit color to produce a sequence of visuals for a variety of professional settings. (30-0)W

OSE 212 Microsoft Word Beginning 1 Sem Hr
Prerequisite: OSE 170 or equivalent. Introduces the Word for Windows word processing program. Teaches how to create, format, save, retrieve, edit, and print documents. (15-0)

OSE 213 Microsoft Word Intermediate 2 Sem Hrs
Prerequisites: OSE 212 or equivalent or permission of instructor. Develops further the practical working knowledge of Word for Windows software. Refines formatting and focuses on page layout and design. (30-0)

OSE 254 Medical Insurance I 3 Sem Hrs
Prerequisite: HSC 105 and BIO 101 or permission of instructor. Includes diagnostic and procedure coding; basic insurance concepts and terminology used by health insurance carriers; completion of claim forms for commercial insurance companies, Blue Cross-Blue Shield of Michigan, Medicare and Medicaid. (45-0) F

OSE 255 Medical Insurance II 3 Sem Hrs
Prerequisite: OSE 254 with a minimum grade of C (2.0) or permission of instructor. An in-depth study of Michigan insurance claims processing including case study, coordination of benefits, adjustments, deductibles, co-pays, posting of payments and resolution of reimbursement problems. Insurance claims for commercial carriers, Blue Cross-Blue Shield, Medicare, Medicaid and CHAMPUS. (45-0) W

OSE 266 Medical Office Practices 3 Sem Hrs
Prerequisites: Sophomore standing, OSE 151, OSE 172, and OSE 276. Integrates medical office correspondence, reports, billing, appointments, medical records, medical-legal issues, and priority setting. Stresses job-task analysis and human relations. (45-0) W

OSE 267 Legal Office Practices 3 Sem Hrs
Prerequisites: Sophomore standing, OSE 151 and 172 or consent of instructor. Integrates legal office concepts and skills; expands knowledge of terminology, definitions, spelling, and shorthand outlines with attention given to human relations. Offered only in odd-numbered years. (45-0) W

OSE 268 Professional Office Procedures 3 Sem Hrs
Prerequisites: OSE 145, OSE 151, OSE 172, CIS 132, CIS 260. Develops various office concepts and skills through the integration of specialized software packages, job-task analyses and human relations skills. Discusses current office topics such as business etiquette, prioritizing, and screening phone calls. (45-0) W

OSE 273 Document Processing: Advanced 3 Sem Hrs
Prerequisites: OSE 172 (which utilizes intermediate WordPerfect for Windows) or equivalent. Develops excellence and refinement of vocational skills and office production jobs using a microcomputer. Provides practice in keyboarding communications used in different professional and business fields. (45-0)

OSE 274 Machine Transcription 2 Sem Hrs
Prerequisite: OSE 172 (with intermediate word processing background) completed with a minimum grade of C (2.0) or equivalent. Marketable transcription skills will be developed through practice by incorporating proper vocabulary and spelling usage; word division; grammar; capitalization; punctuation; letter, memo, and document format; microcomputer and cassette transcription operation. Outside lab assignments required. (30-0) FW

OSE 275 Machine Transcription/Legal **2 Sem Hrs**
Prerequisite: OSE 172 (with intermediate word processing background) completed with a minimum grade of C (2.0) or equivalent, GB 251, and GB 252. Develops marketable legal transcriptions skills through practice of proper legal vocabulary and spelling usage; word division; grammar, capitalization; punctuation; letter and legal document format; microcomputer and cassette transcription machine operation. (30-0) W in odd-numbered years.

OSE 276 Machine Transcription/Medical **3 Sem Hrs**
Prerequisite: OSE 172 (with intermediate word processing background) completed with a minimum grade of C (2.0) or equivalent; BIO 101 and HSC 105 or equivalent. Introduces cassette transcription machine operation and microcomputer to record physicians' dictation of medical progress notes, operative reports, letters and miscellaneous medical documents. Incorporates extensive practice and application of medical terminology, spelling, grammar, punctuation, capitalization. Uses various medical form formats. (45-0) F

OSE 285 Office Technology **3 Sem Hrs**
Prerequisite: Minimum of 25 credit hours completed in Administrative Assistant program or permission of instructor. Introduces students to technological innovations in business and industry. Includes topics such as electronic communication, audio conferencing, video conferencing, and source document automation including voice recognition. Requires on-site visitation. (45-0) W

OSE 290-299 Special Projects in Office Systems Education O

PHILOSOPHY COURSES

PHL 203 Business Ethics **3 Sem Hrs**
Study of basic ethical concepts such as dignity, privacy, and rights. Serves as a foundation for analysis of ethical conflict situations arising specifically in a business environment. Designed to reinforce the ability to make cogent, well-reasoned decisions in the context of ethical conflicts surrounding such topics as affirmative action, consumer rights, employee rights, loyalty, whistle-blowing and the environment. Credit may be earned in PHL 203 or GB 203 but not in both. (45-0) FW

PHL 211 Introduction to Philosophy **3 Sem Hrs**
Designed to acquaint the student with some of the fundamental philosophical questions that have confronted mankind and evaluate various ways of answering these questions. (45-0) FW

PHL 213 Introduction to Ethics **3 Sem Hrs**
Investigates the age-old questions of what's right, what's wrong, and how to know the difference. Through conversation, reading and writing, students explore practical issues such as, abortion, mercy killing, suicide, sex, animal rights, and social inequality. This course is designed to improve students' decision making, thinking, writing, reading and speaking skills and to increase their knowledge and understanding of conflicting values. (45-0) FW

PHL 214 Philosophy of Religion **3 Sem Hrs**
Investigates the rationality of religious beliefs, and the meaning of religious practices, religious language and questions of evidence. Focuses on questions concerning proof of the existence of a deity, the problem of evil, the interpretation of mystical experience, the nature of religious faith and more. (45-0) FW

PHL 215 Health Care Ethics **3 Sem Hrs**
An introduction to moral problems encountered within the health care environment. Includes the identification of ethical issues, the learning of various ethical principles, and the analysis of ethical conflicts. Topics such as euthanasia, experimentation, the right to provide or deny health care, definitions of death, informed consent, allocation of medical resources, and humanizing the health care environment. (45-0) FW

PHL 221 Critical Thinking and Logic **4 Sem Hrs**
Development of critical thinking skills through the study of formal and informal logic. Analysis of fallacies, methods of clear argumentation, syllogisms, inductive logic, scientific method and rational decision-making. (60-0) FWS

PHL 230 Bioethics **2 Sem Hrs**
Addresses basic ethical concepts such as rights and duties, intrinsic and instrumental values, autonomy and the principle of utility. Includes confidentiality, veracity, paternalism, informed consent, abortion, and euthanasia. Uses case studies to develop decision-making abilities. (30-0)

PHL 231A Bioethics in Nursing A **.3 Sem Hr**
Prerequisites: PHL 215 or 230. Must be taken concurrently with NUR 115, 116 and 119 or NT 163. Utilizes basic ethical concepts to analyze ethical cases, topics, and issues encountered in the clinical studies of RN nursing students. (5-0)

PHL 231B Bioethics in Nursing B **.3 Sem Hr**
Prerequisites: PHL 215 or PHL 230. Must be taken concurrently with NUR 240 or NT 215, 216, 219. Utilizes basic ethical concepts to analyze ethical cases, topics, and issues encountered in the clinical studies of RN nursing students. (5-0)

PHL 231C Bioethics in Nursing C **.4 Sem Hr**
Prerequisites: PHL 215 or PHL 230. Must be taken concurrently with NUR 250. Utilizes basic ethical concepts to analyze ethical cases, topics and issues encountered in the clinical studies of RN nursing students. (5-0)

PHL 240 Social and Political Theory **3 Sem Hrs**
Examines past and present political and social systems from theoretical perspective. Entails comparison and evaluation of major ideologies and philosophies of the relationship of individuals to political and social institutions. Political systems such as socialism, communism, fascism, anarchism and liberalism explored. Credit may be earned in PHL 240 or POL 240 but not in both. (45-0) O

PHL 250 Philosophy of Science **3 Sem Hrs**
Investigation of the nature of science through the study of the logical structure of established scientific, pseudoscientific and marginally scientific theories such as astrology, parapsychology, evolution, creationism, and sociobiology. Focuses on such concepts as scientific theory, law, hypothesis, explanation, confirmation, demarcation, observation, theoretical entities. (45-0) O

PHL 260 Philosophy Seminar **3 Sem Hrs**
Prerequisite: Students must have completed one philosophy course. Intensive examination and critical analysis of a specific philosopher's works or a specific philosophical issue within any branch of philosophy, e.g., ethics, metaphysics, epistemology, social or political philosophy. Designed as a seminar for the advanced student. (45-0) FW

PHL 290-299 Special Projects in Philosophy O

PHOTOGRAPHY COURSES

PHO 100A Elements of Color Photography **3 Sem Hrs**
Introduces technical operations of 35mm cameras in the color medium. Improves quality and design of photographs and develops aesthetic awareness and visual literacy. Credit may be earned in ART 100A or PHO 100A but not in both. (45-0)

PHO 101 Photography I **3 Sem Hrs**
Basic aesthetic problems of photography including: a historical and critical context for looking at and making photographs; concurrent darkroom practice which includes black and white film; print development and camera operations. Additional lab hours to be arranged. (45-30) FW

PHO 102 Photography II**3 Sem Hrs**

Prerequisite: PHO 100 or 101 or permission of instructor. Additional foundations of black and white photography, directed to improve skills while also introducing specialty films and techniques. Experiments include infrared and Kodalith films, solarization, reticulation, and montage problems. Additional lab hours to be arranged. (45-30) FW

PHO 107 Photographic Printmaking**3 Sem Hrs**

Exploration of a variety of image-making possibilities through the printing of objects, found pictures, photographic negatives and the photographic collage. Intent is to combine a mixture of contemporary materials and antique processes. Printing methods cover: Cyanotype, Van Dyke Brown, Kwik Print, liquid silver emulsion, and photographic silkscreen. (45-30) O

PHO 201 Photography III**3 Sem Hrs**

Prerequisite: PHO 101. The study of the zone system, studio lighting, exposure calculations, and archival processing using large format cameras with an emphasis on the development of a personal photographic style. Additional lab hours to be arranged. Formerly PHO 103 Advanced Photography. (45-30) O

PHO 202 Color Photography I**3 Sem Hrs**

Prerequisite: PHO 100 or PHO 101 or equivalent. Fundamental techniques of color negative films and printing materials, with a study of the history and aesthetic concerns of the media. Projects will focus on a variety of visual approaches. The documentary style, photo illustration, the commercial assignment and the artistic viewpoint. Additional laboratory time to be arranged beyond the scheduled lecture/laboratory. Formerly PHO 105 Color Photography. (45-30) O

PHO 203 Color Photography II**3 Sem Hrs**

Prerequisite: PHO 100 or PHO 101 or portfolio review. Fundamental techniques of color positive and printing materials including: film types, exposures, filter and cibachrome processing, with a continued examination of historical and contemporary trends in color photography. (45-30) O

PHO 290-299 Special Projects in Photography O**PHYSICS COURSES****PHY 101 Applied Physics****4 Sem Hrs**

Prerequisite: Successful completion (minimum grade of "C", 2.0) of MTH 107 or equivalent. Introduces the basic physical principles involving mechanics, fluids, heat, conservation of energy, and electricity. (60-30)

PHY 111 General Physics I**4 Sem Hrs**

Prerequisites: Trigonometry or high school physics and MTH 119 or equivalent. Designed to familiarize the student with basic physical principles involving mechanics, heat, and sound. (60-45)

PHY 112 General Physics II**4 Sem Hrs**

Prerequisite: PHY 111. Designed to familiarize the student with basic physical principles involving electricity, magnetism, light, and modern physics. (60-45)

PHY 211 Physics I**5 Sem Hrs**

Prerequisites: MTH 161. High school physics recommended. Designed to familiarize science and engineering majors with basic physical principles involving mechanics, heat, and sound. (75-45)

PHY 212 Physics II**5 Sem Hrs**

Prerequisites: PHY 211 and MTH 162. Designed to familiarize science and engineering majors with basic physical principles involving electricity, magnetism, light, and modern physics. (75-45)

PHY 290-299 Special Projects in Physics O**POLITICAL SCIENCE COURSES****POL 103 Introduction to American Government****3 Sem Hrs**

Organizations and functions of the political, electoral, legislative, administrative, and judicial processes of federal, state, and local governments. Credit may be earned in POL 103 or POL 111 but not in both. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

POL 111 American Government and Politics**4 Sem Hrs**

A study of the American political system utilizing the techniques of political science. Particular emphasis is placed on the organization and functioning of the electoral, legislative, administrative, and judicial process of the national government. Comparisons are made between federal, state, and local governments. Recommended for pre-law or social science majors or minors. Credit may be earned in POL 111 or POL 103 but not in both. (This course satisfies the American Government graduation requirement in all curricula.) (60-0) FW

POL 115 Politics of the Environment**2 Sem Hrs**

Designed to develop an understanding and appreciation of the interacting forces that comprise our environment. Emphasis will center on the modern ecological problems involved in human's relationship to the geographic area under study as it has been affected by history, economics, and ecological conditions. Using the Saginaw Valley, students will examine various aspects of the exploitation, conservation, and control of the Valley's environment. May also be taken as BIO 115. Credit may be earned in POL 115 or BIO 115 but not in both. (30-0) WD

POL 212 State and Local Governments**3 Sem Hrs**

Prerequisite: A course in political science or permission of instructor. Development, structure, organization and problems of the state and local units of government; along with their relation to the federal government. (45-0) O

POL 220 Minority Group Politics**3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. An examination of the dynamics of minority group politics in the American political system. The nature, role, techniques, and objectives of ethnic groups will be analyzed, with special emphasis on the Afro-American and the Mexican-American. (45-0) FW

POL 221 Comparative Government**3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. The study of major European and selected non-western political systems. Emphasis is placed on the techniques of comparative analysis and concepts of modernization, political development, and political culture. (45-0) O

POL 223 The Judicial Process**3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. A study of state and federal court systems, including the selection of judges, the roles of trial, primary and secondary appellate courts in civil and criminal cases, lawyers and the organized bar, pressure groups, relations between state and federal courts, as well as the legislative and executive branches, access to courts, and judicial review. Emphasis will also be given to judicial policy making, including constitutional law and civil liberties. (45-0) O

POL 225 International Relations**3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. Introduction to the study of international politics. Covers the nation-state system, cold war politics, colonialism, and the problems of political stability. Also includes a survey of regional and international organizations. (45-0) O

POL 228 Constitutional Issues**3 Sem Hrs**

A study of contemporary constitutional controversies set against their historical background. Typical issues discussed include: death penalty; abortion; euthanasia; freedom of the press vs. national security; presidential and congressional control of foreign policy; the insanity plea; and affirmative action. (45-0) O

POL 229 Political Terrorism 3 Sem Hrs
A study of state- and non-state sponsored terrorism: definition, origins, purposes, and nature of terrorism; tactics and weapons; objects and audiences; responses of objects and audiences: theory and case studies. (30-0) O

POL 240 Social and Political Theory 3 Sem Hrs
Examines past and present political and social system from a theoretical perspective. Entails a comparison and evaluation of the major ideologies and rationales of political systems such as socialism, communism, fascism, anarchism, and liberalism. Credit may be earned in POL 240 or PHL 240 but not in both. (45-0) O

POL 241 Contemporary Feminist Thought 3 Sem Hrs
Provides a theoretical introduction to feminist thought and relates feminist thought to American political thought and American society. (45-0) O

POL 268 International Studies in Political Science 1-4 Sem Hrs
The student will elect to do either a survey study of the overall political system of a country other than the United States or an in-depth study of one or more aspects of that political system. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0) O

POL 275 The Vietnam War 3 Sem Hrs
An interdisciplinary examination of the Vietnam War from its earliest beginnings as a colonial conflict to the withdrawal of American forces in 1975. The course seeks to integrate military, diplomatic and political factors in order to understand America's involvement. It also is an attempt to consider American decision-making in the broad context of the nation's global outlook and policies. Credit may be earned in POL 275 or HIS 275 but not in both. (45-0) O

POL 290-299 Special Projects in Political Science O

PRACTICAL NURSING EDUCATION COURSES

PNE 100 Role/Function of Nurse Assistant 1 Sem Hr
Prerequisite: PNE 101 concurrently. Focus on function and responsibilities of nurse assistant in relation to special needs of residents in long-term care facilities. Emphasis on legal and ethical aspects associated with role of nurse assistant. Prepares PN student who successfully completes PNE 101 to take competence evaluation tests (written and skills) leading to State certification as a Nursing Assistant. (15-0) F

PNE 101 Fundamentals of Practical Nursing 8 Sem Hrs
Prerequisite: Validation for PN Program course work. Focuses on the Nursing Process as applied to basic human needs, introduces concepts and theories related to holistic patient care and health education. Includes nutrition, cultural, psychosocial, and legal aspects pertaining to practical nursing. Includes opportunities to practice basic clinical nursing skills and techniques in the care of adults in selected clinical facilities. (75-150) F

PNE 102 Care of Adult I 8 Sem Hrs
Prerequisite: PNE 101, PNE 110 with a minimum grade of C. Emphasizes application of the nursing process in the care of the adult medical-surgical patient. Includes major concepts related to immunity, fluid and electrolyte balance, acid-base balance, communication, teaching-learning, nutrition, pre- and post-operative care, oncology, neurosensory, endocrinology, and musculoskeletal systems. (75-135) W

PNE 103 Maternal Child Care Nursing 5 Sem Hrs
Prerequisite: Completion of PNE 104 with minimum of C grade. Introduces nursing care of the family during child-bearing and child-rearing. Focuses on basic family-centered maternity care, growth and development, and care of pediatric patients and their families with common well-defined problems. Includes observation and selected hands-on experiences in clinical facilities. (60-45) S

PNE 104 Care of Adult II 8 Sem Hrs
Prerequisite: Completion of PNE 102 with minimum grade of C. Focuses on care of the adult patients experiencing healing alterations related to the following systems: renal, gastrointestinal, cardiovascular, peripheral vascular, pulmonary and reproductive. Includes clinical experiences in the care of patients experiencing disease processes relative to these systems; covers care of terminally ill, home care and trauma patients. (75-135) S

PNE 110 Principles of Pharmacology for PN 1 Sem Hr
Prerequisite: Validation for PN program course work. Presents the foundation of pharmacologic principles in the treatment of clients across the life span. Includes medication administration in the clinical setting relative to the practical nurse. (15-0) F

PNE 111 Role/Function Practical Nurse 1 Sem Hr
Prerequisites: NUR 101, 102, 103, 150 and NUR 105/106. Focus on functions and responsibility of the Practical Nurse in a variety of health care settings. Emphasis on scope of practice of the Practical Nurse as defined by the Michigan Nurse Practice Act. Prepares student who has completed specified clinical courses in the RN program to write the PN licensure exams. (15-0) O

PNE 290-299 Special Projects in Practical Nursing O

PHYSICAL SCIENCE COURSES

PSC 101 Physical Science 4 Sem Hrs
Recommended for students not majoring in the sciences. Fundamental concepts of the physical sciences are investigated and used to explore selected topics of astronomy and energy. Emphasis is directed toward a deeper understanding of the relevance of science to modern society. (45-30)

PSC 110 Energy in a Finite World 3 Sem Hrs
Designed to acquaint the student with basic energy concepts, the status and potential of current and future energy resources, the use and misuse of energy resources and technologies, and how to cope with decision making and problem solving as these concepts relate to energy. A number of mini-projects will be required which are designed to enhance the students' interest, understanding, and application of energy generation and utilization practices. (45-0) O

PSC 290-299 Special Projects in Physical Science O

PSYCHOLOGY COURSES

PSY 101 Applied Psychology 3 Sem Hrs
An introductory course in basic principles of human relations that may be used in business and industry. Emphasis on understanding motivation and behavior in practical situations; help in developing an appreciation of our own behavior so that students may work more successfully with supervisors and with peers. (45-0)

PSY 130 Psychology of Substance Abuse 3 Sem Hrs
A study of the predominant theories developed to explain the origins and the prevalence of substance abuse. Social deprivation, addictive personality, X-factor, need state, ignorance, peer pressure, personality defects and socialization theories will be examined. (45-0) EO

PSY 211 General Psychology 4 Sem Hrs
A study of the scientific principles underlying experience and behavior. Designed to give an understanding of human behavior in terms of the intrapsychic, behavioral, physiological, and environmental viewpoints. The course will cover basic research methods, learning, social factors, developmental changes, physiology, sensation, perception, motivation, intelligence, and personality. (60-0)

PSY 223 Child Psychology **3 Sem Hrs**
Prerequisite: PSY 211 or CD 114. Provides an in-depth understanding of the emotional, intellectual, social, and physical development in children from conception through adolescence. Considers the effect of heredity, environment, culture, and values on children's behavior, as well as, the effect children have on adults' behavior. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science in Child Development. Credit may be earned in PSY 223 or CD 115 but not in both. (45-0)

PSY 231 Theories of Personality **3 Sem Hrs**
Prerequisite: PSY 211. An examination of theories of personality development from a psychodynamic, social learning and humanistic perspective. Individual theories are critiqued regarding personality development, abnormality, psychotherapy, research, and the concept of humanity. (45-0)

PSY 235 Adult Development **3 Sem Hrs**
Prerequisite: PSY 211. Examines human behavior and adaptation in the adult years. Topics will include: Theories of adult development, psychological aspects of normal adulthood, and behavioral disorders due to aging. Emphasis will be placed on application of theoretical concepts and research findings. (45-0) O

PSY 241 Abnormal Psychology **3 Sem Hrs**
Prerequisite: PSY 211. An examination of symptoms, and treatment of psychological disorders, including the psychodynamic, behavioral, humanistic, and neuroscience views of abnormal behavior. (45-0)

PSY 290-299 Special Projects in Psychology O

PHYSICAL THERAPIST ASSISTANT COURSES

PTA 101 Clinical Anatomy **2 Sem Hrs**
Prerequisite: Admission to the Physical Therapist Assistant Program. Provides the gross anatomy concepts necessary to implement procedures utilized in physical therapy practice. (30-15) FD

PTA 102 Clinical Neuroanatomy **2 Sem Hrs**
Prerequisite: PTA 101, 105 and 110 each with a C (2.0) minimum grade. Provides the neuroanatomy concepts necessary to implement procedures utilized in physical therapy practice. (30-0) WD

PTA 105 Modalities I/Clinic I **6 Sem Hrs**
Prerequisite: Admission to the Physical Therapist Assistant program. Provides the theory, principles and technical skills of hydrotherapy, massage, ultrasound, diathermy, ultraviolet, infrared, traction, Jobst and paraffin modalities. (Includes twenty hours of assigned clinical observation.) (45-75) FD

PTA 110 Therapeutic Exercise I **3 Sem Hrs**
Prerequisite: Admission to the PTA program. Introduces basic therapeutic exercise and activities of daily living (A.D.L.) (30-45) FD

PTA 120 Therapeutic Exercise 2 **2 Sem Hrs**
Prerequisites: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Introduces the general principles, rationale, and technical skills related to rehabilitation techniques for orthopedic, neurological, medical and pediatric disabilities. (15-45) WD

PTA 121 Human Growth and Development **2 Sem Hrs**
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Provides theory in and observation of normal and abnormal physical development from birth through aging. (15-15) WD

PTA 123 Clinical Medicine 1 **3 Sem Hrs**
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Introduces acute and chronic pathological conditions resulting from disease or injury that are commonly treated in physical therapy. (30-30) WD

PTA 124 PTA Clinic 2 **2 Sem Hrs**
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Structured clinical experience designed to provide the opportunity to observe and assist with physical therapy procedures. (0-96) WD

PTA 125 Measurements Techniques **3 Sem Hrs**
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Provides the technical skills and knowledge necessary to assist a physical therapist with goniometry, muscle testing gait/posture evaluations, and sensory/coordination assessment. (15-45) WD

PTA 205 Modalities II **2 Sem Hrs**
Prerequisite: PTA 102, 120, 121, 123, 124, 125 each with a C (2.0) minimum grade. Provides the theory, principles, and technical skills necessary to perform electrotherapy and other advanced modalities. (12-24) FD

PTA 210 Therapeutic Exercise 3 **2 Sem Hrs**
Prerequisite: PTA 205 and 213 each with a C (2.0) minimum grade. Provides the general concepts related to sensory motor, inhibition and facilitation techniques. (18-36) FD

PTA 213 Clinical Medicine 2 **1 Sem Hr**
Prerequisites: PTA 102, 120, 121, 123, 124, and 125 each with a C (2.0) minimum grade. An advanced study of specific orthopedic conditions treated in the physical therapy setting. (12-15) FD

PTA 214 PTA Clinic 3 **3 Sem Hrs**
Prerequisite: PTA 125 and 121 each with a C (2.0) minimum grade and permission of instructor. Structured clinical experience designed to provide the opportunity to observe and assist physical therapy procedures. (0-160) FD

PTA 215 Rehabilitation Programs **1 Sem Hr**
Prerequisite: PTA 205 and 213 each with a C (2.0) minimum grade. Introduces the rehabilitation team concept and appropriate documentation skills. Provides the rationale and techniques employed in the rehabilitation of persons with long-term disabilities. (13-15) FD

PTA 220 Chest Physical Therapy **1 Sem Hr**
Prerequisite: PTA 214 with a C (2.0) minimum grade. Provides the theory, principles and skills used in chest physical therapy. Introduces basic cardiac rehabilitation. (15-0) WD

PTA 221 Clinical Seminar **2 Sem Hrs**
Prerequisite: PTA 220 with a C (2.0) minimum grade. Provides the opportunity for students to discuss professional, ethical and legal issues related to clinical practice. (15-15) WD

PTA 224 PTA Clinic 4 **9 Sem Hrs**
Prerequisite: PTA 214 and 205 with a C (2.0) minimum grade and permission of instructor. Structured clinical experience designed to provide opportunity for integration and refinement of the knowledge and skills necessary for entry level employment. (0-480) WD

PTA 290-299 Special Projects in Physical Therapy Assisting O

QUALITY ASSURANCE COURSES

QA 110 Quality Problem Solving Tools **1 Sem Hr**
Develops basic skills in the use of charts and graphs as tools used in solving problems in a Quality Management organization. Demonstrates twenty-six tools such as Pareto chart, flow charts, cause/effect diagrams, control charts, etc. (15-0)

QA 120 Quality & Productivity Management **2 Sem Hrs**
Personnel in management and supervisory positions will demonstrate the skills and insight needed to manage effectively in a quality-conscious work environment. This is done through the study of the philosophies of Deming, Juran, Crosby, Shainin, Taguchi, and with statistical problem solving techniques. (30-0) O

QA 122 ISO 9000/QS 9000 Standards**1 Sem Hr**

Provides overview of the International Quality System standard, ISO 9000, and the Automotive Quality System Standard based on QS 9000. Covers the history of the standards, their elements and requirements, the level of documentation needed to prove compliance and steps a company must take to implement standards with the registration process. (15-0)

QA 124 Quality Systems I**3 Sem Hrs**

Prerequisite: QA 120 or permission of instructor. Personnel in management and supervisory positions will demonstrate the skills to effectively plan and implement a quality system and show its relationship to other functions in an organization. This is done through the study of the Quality Function and its applications applied to service, business and industry. (45-0) 0

QA 126 Quality Systems II**3 Sem Hrs**

Prerequisite: QA 124. Continuation of QA 124. Personnel in management and supervisory positions will demonstrate the skills to interface their internal quality systems with external quality systems. Applications for service, business and industry will be emphasized. (45-0) 0

QA 130 Audit Preparation**1 Sem Hr**

Managers and supervisors explore how to prepare for non-financial audits. The focus is on the audit function, understanding requirements, and the documentation to meet those requirements. ISO-9000 and other assessment criteria will be defined and applications explored for service, business and industry. (15-0)

QA 131 Quality Auditing**2 Sem Hrs**

Prerequisite: QA 124. Managers and supervisors explore both the preparation for and performance of non-financial audits. The focus is on selecting an audit team, planning, conducting, and summarizing the audit data and issuing a written report on the audit results. The auditing functions, both internal and external, will be defined and applications explored for service, business and industry. (30-0) 0

QA 191 Quality Teamwork**1 Sem Hr**

Designed to build the students ability to respond to the needs of groups as a team member and a team leader. Studies team structures, roles of team members, and tools used in facilitating teams that contribute to organizational quality. Opportunities to model effective team operations will be provided. Credit may be earned in either QA 191 or GB 191 but not in both. (15-0) 0

QA 241 Six Tools of SPC**1 Sem Hr**

Designed to familiarize the student with the six statistical tools utilized in the problem solving needs of quality control. The emphasis is placed on pareto principles, flow diagrams, brain storming, cause and effect diagrams, variability, histograms, average and range charts, median and range charts, and P charts. (15-0) FE WE

QA 244 Statistical Process Control I**3 Sem Hrs**

Prerequisite: QA 241, MFG 111, and MT 110 or equivalent; or MFG 231. Develops skill in the use of control charts in the manufacturing process. Students select proper control for the process, construct the control chart from production data, and analyze it for statistical stability. Includes both attribute and variable data control charts. (45-0) WE

QA 246 Taguchi Techniques I**1 Sem Hr**

Prerequisites: MTH 231 or QA 244. An overview of the Taguchi method of experimental design. Reviews the three major phases: system design; parameter design; and tolerance design; and covers the Loss Function and Signal-to-Noise Ratio. (15-0) 0

QA 247 Taguchi Techniques II**3 Sem Hrs**

Prerequisites: MTH 233 or QA 244. An in-depth study of the Taguchi technique of experimental design. Topics include: loss function; parameter design for minimum, nominal, and maximum targets; tolerance design under noise conditions. A Taguchi design of experiment project is required. (45-0) 0

RADIOGRAPHY COURSES**RAD 100 Basic Science of Medical Imaging****3 Sem Hrs**

Prerequisite: Admission to Radiography Program. RAD 105, RAD 110, and RAD 115 must be taken concurrently. Provides the foundation for basic radiological science. Emphasizes the fundamentals of x-ray generating equipment, basic principles of electronics for x-ray production, beam characteristics, units of measurement and electromagnetism. (30-30) F

RAD 102 Introduction to Radiography**2 Sem Hrs**

Prerequisite: HSC 105 with a minimum C (2.0) grade. Provides an overview of diagnostic imaging and its role in patient diagnosis. Introduces basic principles of radiographic imaging and methods of patient care. Emphasizes the ethical and legal responsibilities of the Radiographer. Required observations in hospital diagnostic imaging departments. (30-0) W

RAD 105 Fundamentals of Radiography**2 Sem Hrs**

Prerequisite: Admission to Radiography Program. Provides the student with the theory and skills necessary to operate the radiographic equipment, process radiographs and use radiographic accessory devices in the campus laboratory setting. (15-22.5) FD

RAD 110 Principles of Radiographic Exposure**1 Sem Hr**

Prerequisites: RAD 105 and RAD 102 each with a minimum grade of C (2.0). Provides the theory and skills necessary to analyze the diagnostic quality of a radiograph and effectively manipulate exposure variables to produce a diagnostic radiograph. (7.5-21) FD

RAD 115 Clinical Orientation**3 Sem Hrs**

Prerequisites: Completion of RAD 105 and 102 each with a minimum grade of C (2.0) plus concurrent enrollment in RAD 110. Introduces the student to the clinical setting and provides the framework necessary to accomplish the purposes and objectives of clinical education. (0-112) FD

RAD 120 Principles of Radiation Biology and Protection**2 Sem Hrs**

Prerequisite: RAD 100, RAD 110, and RAD 115 each with a minimum grade of C (2.0) plus concurrent enrollment in RAD 130. Examines biological effects of radiation on cells, organs, and systems. Emphasis is placed on standards and methods of practice and includes radiation exposure standards and radiation monitoring. (30-0) WD

RAD 130 Radiographic Procedures 1**2 Sem Hrs**

Prerequisites: RAD 100, 110, and 115 each with a C (2.0) minimum grade. Introduces the basic terminology of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the chest, upper extremities, and lower extremities. (15-22.5) WD

RAD 135 Clinical Education 1**6 Sem Hrs**

Prerequisites: RAD 120 and RAD 130 each with a C (2.0) minimum grade and concurrent enrollment in RAD 140. Provides structured clinical experience necessary to perform radiographic procedures of the chest, upper extremities, and lower extremities. Weekend and evening assignments may be required. (0-285) WD

RAD 140 Clinical Seminar 1**1 Sem Hr**

Prerequisites: RAD 120 and RAD 130 each with a C (2.0) minimum grade and concurrent enrollment in RAD 135. A clinical overview of radiographic procedures of the chest, upper extremities and lower extremities. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) WD

RAD 150 Radiographic Procedures 2**2 Sem Hrs**

Prerequisites: RAD 135 and RAD 140 each with a C (2.0) minimum grade. A continuation of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the abdomen, gastrointestinal tract, biliary tract, and urinary tract. (15-22.5) SD

RAD 155 Radiographic Quality Assurance 1 Sem Hr
Prerequisites: RAD 135 and RAD 140 each with a C (2.0) minimum grade plus concurrent enrollment in RAD 150. Introduces the principles procedures, instrumentation, and testing methods used for quality control of the radiographic imaging system. (15-0) SD

RAD 160 Clinical Education 2 7 Sem Hrs
Prerequisite: RAD 150 and RAD 155 each with a C (2.0) minimum grade and concurrent enrollment in RAD 165. Provides structured clinical experience necessary to perform radiographic procedures of the abdomen, biliary tract, gastrointestinal tract, and urinary tract. Weekend and evening assignments may be required. (0-395) S

RAD 165 Clinical Seminar 2 1 Sem Hr
Prerequisites: RAD 150 and RAD 155 each with a C (2.0) minimum grade and concurrent enrollment in RAD 160. A clinical overview of radiographic procedures of the abdomen, gastrointestinal tract, biliary tract, and urinary tract. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) SD

RAD 210 Pathology in Radiography 2 Sem Hrs
Prerequisites: RAD 160 and 165 each with a C (2.0) minimum grade. The course will overview the pathological processes that occur as a consequence of aging, disease, heredity, or trauma. The effects of pathology on the radiographic image will be correlated with the techniques used to best manifest the pathological condition. Adjustments in the radiographic procedures or technical factors because of pathology will be stressed. (30-0) FD

RAD 215 Radiographic Procedures 3 2 Sem Hrs
Prerequisites: RAD 160 and 165 each with a C (2.0) minimum grade. A continuation of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. (15-22.5) FD

RAD 220 Clinical Education 3 7 Sem Hrs
Prerequisites: RAD 210 and 215 each with a C (2.0) minimum grade and concurrent enrollment in RAD 225. Provides structured clinical experience necessary to perform radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. Weekend and evening assignments may be required. (0-395) FD

RAD 225 Clinical Seminar 3 1 Sem Hr
Prerequisites: RAD 210 and 215 each with a C (2.0) minimum grade and concurrent enrollment in RAD 220. Provides a clinical overview of radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) FD

RAD 235 Radiographic Procedures 4 2 Sem Hrs
Prerequisites: RAD 220 and 225 each with a C (2.0) minimum grade. A continuation of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the skull and facial cranium. (15-22.5) WD

RAD 240 Special Procedures 3 Sem Hrs
Prerequisites: RAD 220 and 225 each with a C (2.0) minimum grade. Introduces the more sophisticated and technically involved imaging procedures used in diagnostic radiology. Provides a basis for understanding the role of the radiographer in the area of special procedures. (45-0) WD

RAD 245 Clinical Education 4 7 Sem Hrs
Prerequisites: RAD 235 and 240 each with a C (2.0) minimum grade and concurrent enrollment in RAD 250. Provides structured clinical experience necessary to perform radiographic procedures of the skull and facial cranium. Weekend and evening assignments may be required. (0-395) WD

RAD 250 Clinical Seminar 4 1 Sem Hr
Prerequisites: RAD 235 and 240 each with a C (2.0) minimum grade and concurrent enrollment in RAD 245. A clinical overview of radiographic procedures of the skull and facial cranium. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) WD

RAD 260 Clinical Education 5 5 Sem Hrs
Prerequisite: RAD 245 and RAD 250 each with a C (2.0) minimum grade. Provides structured clinical experience to perform advanced level radiographic procedures. Optional rotations through specialty areas may be provided. Weekend and evening assignments may be required. (0-200) S

RAD 290-299 Special Projects in Radiography O

RESIDENTIAL CONSTRUCTION COURSES

RC 101 Construction Print Interpretation 3 Sem Hrs
Instruction in this course includes trade terminology and description of the various views of working drawings, pictorial drawings, and the basic procedures in development of these drawings. Also included is the interpretation of specifications and job information as they pertain to construction and layout. Credit may be earned in either RC 101 or SKCT 111 but not both. (45-0) FD WE

RC 102 Building Materials 3 Sem Hrs
A study of the basic building materials used primarily for residential construction. Credit may be earned in RC 102 or ARC 101 but not in both. (45-0) FD WE

RC 104 Construction Lab I 3 Sem Hrs
A study of the care and use of woodworking tools. Included is: tool terminology, purpose and uses of various tools and the functional principles of woodworking hand tools, including those which are power or pneumatically driven. (15-60) FD WE

RC 105 Building Site Surveying 3 Sem Hrs
Prerequisite: RC 113. An introduction to the tools and instruments used for surveying. Methods and procedures of developing a building layout are included. Credit may be earned in RC 105 or ARC 221 but not in both. (45-0) WD

RC 106 Concrete and Foundations 4 Sem Hrs
Prerequisite: RC 102. Studies practical methods and procedures of preparing and setting concrete forms for such areas as basement floors, garage floors, driveways, sidewalks, patios, etc. (45-30) WD

RC 108 Construction Safety 2 Sem Hrs
A study of Occupational Safety and Health Administration (OSHA) safety and health standards required of residential builders. Includes training in first aid and cardio pulmonary resuscitation (CPR) to treat on-the-job injuries. Includes proper construction of safe scaffolding. (30-0) WD

RC 109 Residential Drafting 4 Sem Hrs
Fundamentals of residential drafting including linework, lettering, symbols, multiview projections, one and two point perspective, floor plans, sections and elevations. Study of space requirements. Introduction to CAD. Credit may be earned in RC 109 or ARC 105 but not in both. (45-45) FD

RC 113 Carpentry Math 2 Sem Hrs
Prerequisite: Students scoring 19 or higher on the numerical skills portion of ASSET can waive this course. Acquaints students with basic mathematical processes relating to construction and includes practical demonstrations. Covers fractions, decimals, ratios and percentages. Credit may be earned in either RC 113 or SKCT 113 but not both. (30-0) FD WE

RC 114 Framing Square 3 Sem Hrs
Prerequisite: RC 113 or a score of 19 or higher on the numerical skills portion of ASSET. The use of the framing square in construction. Credit may be earned in either RC 114 or SKCT 114 but not both. (45-0) FD WE

RC 200 Construction Contracting Rules and Regulations**3 Sem Hrs**

Introduction to contracting laws, rules, and regulations as they apply to residential builders. Covers builder's law, builder's license, insurance, deeds and abstracts, loans and land development. (45-0) FD

RC 201 Rough and Outside Framing**4 Sem Hrs**

Prerequisite: RC 104. Instruction in the techniques of construction used in all phases of framing and exterior finishing. (30-60) FD

RC 202 Building Materials Estimation**3 Sem Hrs**

Prerequisite: RC 113. A course designed to introduce methods and procedures commonly used in determining the costs of construction materials. Credit may be earned in RC 202 or ARC 204 but not in both. (45-0) FD

RC 203 Construction Laboratory II**2 Sem Hrs**

Prerequisites: RC 104 and 114. A course designed to allow time for practical application of the various construction procedures that are typically encountered on the job. Problem solving is a feature of this course. (15-60) FD

RC 204 Inside Finishing and Hardware**3 Sem Hrs**

Prerequisites: RC 104 and 114. Instruction includes principles of interior construction, joinery and installation, and finishing of all types of interior trim. (45-30) WD

RC 205 Cabinet Making and Millwork**5 Sem Hrs**

Prerequisite: RC 203. A study of the construction, placement, and installation procedures of cabinets used in residential buildings. (45-60) WD

RC 206 Plumbing, Heating, and Electrical Equipment**3 Sem Hrs**

Designed to study equipment installation as it pertains to construction and carpentry. Credit may be earned in RC 206 or ARC 111 but not in both. (45-0) WD

RC 211 Elements of Structural Design**3 Sem Hrs**

Review of basic mechanics. Analysis of live and dead loads on simple structural members. Use and limitations of wood, steel and concrete handbooks in structural design. Use of structural calculations with micro-computers and calculators in solving basic structural problems. Credit may be earned in RC 211 or ARC 211 but not in both. (45-0) WD

RC 212 Building Systems Components**3 Sem Hrs**

Provides a comprehensive overview of the various types of construction design and structural capabilities. Covers framing techniques and the application of relevant materials. Design and application of different types of interior and exterior materials are stressed. (45-15) O

RC 290-299 Special Projects In Residential Construction O**REAL ESTATE COURSES****RE 150 Real Estate Fundamentals****3 Sem Hrs**

Designed to acquaint the student with the principles of real estate including fundamentals, legal concepts, real estate licensing, brokerage, financing, and appraising. Upon presentation of a Real Estate Sales License to the chairperson of the business division of Delta College, Delta College will grant 3 hours of credit for RE 150 for prior learning experience. (45-0) O

RE 280 Real Estate Principles**8 Sem Hrs**

Includes all materials from the Michigan Association of Realtors Realtor Institute GRI I, GRI II, and GRI III. In order to declare this curriculum and to receive the Real Estate Associate Degree, students must successfully complete the GRI courses through the Michigan Association of Realtors. Upon presentation of a copy of the GRI certificate to the chairperson of the business division of Delta College, Delta College will grant 8 hours of credit in RE 280 for prior learning experience. (180-0)

RE 284 Real Estate Valuation**3 Sem Hrs**

Intended to serve the educational requirement of the State of Michigan Real Estate Valuation Specialist. Upon presentation of a copy of a certificate of completion for the Real Estate Valuation Specialist License (from the State of Michigan) to the chairperson of the business division of Delta College, Delta College will award 3 credits for RE 284 for prior learning experience. (45-0)

RE 285 Real Estate Appraiser**2 Sem Hrs**

Prerequisite: RE 284. Intended to serve as the remaining part of the educational requirement for a State Licensed Real Estate Appraiser. Upon presentation of a copy of a certificate of completion for a State Licensed Real Estate Appraiser (from the State of Michigan) to the chairperson of the business division of Delta College, Delta College will award 2 credits for RE 285 for prior learning experience.

REFRIGERATION/HEATING/AIR CONDITIONING COURSES**RHA 121 Fundamentals of Refrigeration & A/C****3 Sem Hrs**

Introduces the mechanical refrigeration cycle as it applies to residential and light commercial refrigeration and air conditioning equipment. Focuses on the functions of individual components, and develops basic skills in using various tools and related equipment. Credit may be earned in either RHA 121 or SKPT 121, but not both. (35-10)

RHA 122 Refrigeration & A/C Service I**3 Sem Hrs**

Prerequisites: RHA 121, and MTH107. Covers common types of domestic refrigerators, dehumidifiers and portable air-conditioners with particular attention to principles of construction and operation of complete refrigeration systems. Through classroom demonstrations and lab experiments, students understand theory and principles underlying repairing and practical shop work. Credit may be earned in either RHA 122 or SKPT 122, but not both. (35-10)

RHA 123 Commercial Refrigeration I**3 Sem Hrs**

Prerequisite: RHA 122. Develops understanding and basic skills in the servicing of commercial units such as walk-ins, reach-ins, display cases and commercial ice makers. Emphasizes refrigeration system components and piping practices. Credit may be earned in either RHA 123 or SKPT 123, but not both. (35-10)

RHA 124 Refrigeration & A/C Service II**3 Sem Hrs**

Prerequisite: RHA 122. Develops understanding and operational skills in trouble shooting domestic refrigeration and air conditioning systems. Focuses on the electrical components and system parts in frost-free, conventional and cyclematic units, and portable air conditioning units. Credit may be earned in either RHA 124 or SKPT 124, but not both. (35-10)

RHA 125 Commercial Refrigeration II**3 Sem Hrs**

Prerequisite: RHA 123. Builds operational skills in servicing of commercial units such as walk-ins, reach-ins, display cases and commercial ice makers. Emphasizes electricity and electrical components and trouble-shooting. Credit may be earned in either RHA 125 or SKPT 125, but not both. (35-10)

RHA 135 Heating System Fundamentals**3 Sem Hrs**

Introduces various heating systems. Through lecture and demonstration, students understand the principles of heating systems and duct design. Reviews indoor air quality enhancements. (45-0)

RHA 136 Heating Service Fundamentals**3 Sem Hrs**

Prerequisite: RHA 135. Introduces service on gas, fuel oil, and electric heating apparatus. Focuses on system mechanics and electrical circuits. Students gain basic skills on proper service procedures and safety. (35-10)

RHA 140 Applied Electricity I 3 Sem Hrs
Teaches students beginning electricity. Uses non-mathematical treatment of basic AC (alternating current) circuits. Includes introductory schematic symbols and circuits, Ohm's Law and Power formulas, series, parallel and simple combination circuits (not using Kirchoff, Thevenin, or Norton loop analysis), magnetism, electromagnetism, lighting and timing circuits. Includes hands-on circuit construction. Credit may be earned in RHA 140 or SKET 106 but not both. (45-0)

RHA 142 Sheetmetal Layout I 2 Sem Hrs
Develops geometrical structures, intersections by radial and triangulation methods of sheetmetal layout, the drawing of development layouts and the forming of actual models with sheetmetal. Credit may be earned in RHA 142 or SKMT 171, but not both. (30-30)

RHA 290-299 Special Projects in Refrigeration/Heating/Air Conditioning

ROBOTICS TECHNOLOGY COURSES

ROB 101 Introduction to Robotics 1 Sem Hr
Surveys the global applications of robotics in the fields of manufacturing, medicine, agriculture, industrial security, waste cleanup, consumerism, military, and aerospace. Overview of robot types, programming, end effectors, and interface with the environment. Several robots are demonstrated in the lab. (15-0) O

ROB 103 Robotic Power, Sensors and Controls 3 Sem Hrs
Prerequisite: MTH 111 and PHY 101. Structure, mechanics, and control of the robot arm and end effector. Topics include robot forces, displacement and motion, mechanical drives and components fluid power, electromechanical sensors, and computer-interface controls. (45-0) O

ROB 290-299 Special Projects in Robotics Technology O

RESPIRATORY CARE COURSES

RT 100 Basic Sciences for Respiratory Care 2 Sem Hrs
Prerequisite: High school algebra or MTH 107 with C (2.0) minimum grade within the past five years. Introduces the basic principles of math, chemistry, and physics utilized in the field of respiratory care. Emphasis is placed on the physical and chemical principles relating to liquids and gases as they provide a foundation for the study of respiratory care. (30-0).

RT 117 Basic Respiratory Care I 3 Sem Hrs
Prerequisite: Admission to the Respiratory Care Program. RT 118, RT 121, RT 126, and RT 131 must be taken concurrently. Presents the theory and application of skills required for the delivery of the basic respiratory care modalities of medical gases, humidity, and aerosol therapy. Emphasizes treatment of adult and pediatric patients with application to specific disease states. (39-12) F

RT 118 Basic Respiratory Care II 3 Sem Hrs
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 121, RT 126, and RT 131 must be taken concurrently. Presents the theory and application of skills required to control transmissible diseases, to perform an appropriate physical assessment of the respiratory care patient, and for the delivery of the basic respiratory care modalities of pharmacology, incentive spirometry, and chest physical therapy. Emphasizes treatment related to adult and pediatric patients with application to the specific disease states. (38-14) F

RT 121 Orientation to RC 2 Sem Hrs
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 118, RT 126, and RT 131 must be taken concurrently. Introduces the role of a professional respiratory therapist from an historical, professional, and management perspective as well as the clinical setting. Includes CPR for the Professional Rescuer. (15-30) F

RT 126 Clinical Education I 3 Sem Hrs
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 118, RT 121, and RT 131 must be taken concurrently. Provides the opportunity in the clinical setting to apply and practice skills learned. (0-120) F

RT 131 Artificial Airway Care and Manual Ventilation 2 Sem Hrs
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 118, RT 121, & RT 126 must be taken concurrently. Presents the theory and application of skills required to provide care of the patient with an artificial airway and manual ventilation. (26-8) F

RT 132 Adult Ventilatory Care 3 Sem Hrs
Prerequisites: RT 117, RT 118, RT 121, RT 126, and RT 131. RT 135, RT 146, and RT 149 must be taken concurrently. Presents the theory and application of skills required to provide adult mechanical ventilatory care. (39-12) W

RT 135 Diagnostics and Special Procedures 4 Sem Hrs
Prerequisites: RT 117, RT 118, RT 121, RT 126, & RT 131. RT 132, RT 146, and RT 149 must be taken concurrently. Presents the theory and application of skills required to perform arterial and mixed venous blood sampling and analysis, basic pulmonary function testing, and to interpret the results of and make recommendations for care based on these diagnostic procedures. Emphasizes the respiratory therapist's role in chest and lateral neck x-ray evaluation, bronchoscopy, and chest tube drainage. (54-12) W

RT 146 Clinical Education II 6 Sem Hrs
Prerequisites: RT 117, RT 118, RT 121, RT 126 and RT 131. RT 132, RT 135, RT 149 must be taken concurrently. Provides the opportunity to apply clinical skills with emphasis on the critically ill patient. (0-240) W

RT 149 Clinical Ed 2 Seminar 1 Sem Hr
Prerequisites: RT 117, RT 118, RT 121, RT 126, and RT 131. RT 132, RT 135, and RT 146 must be taken concurrently. Provides the opportunity to integrate the classroom and clinical activities of the concurrent courses in a seminar format. (15-0) W

RT 150 Cardiovascular Evaluation and Monitoring 3 Sem Hrs
Prerequisites: RT 132, RT 135, RT 146, & RT 149. Presents the theory and application of skills required to provide adult hemodynamic and ECG monitoring and interpretation. (41-8) S

RT 160 Transition-Technician to Therapist 2 Sem Hrs
Completion of an AMA-approved Respiratory Therapy Technician Program within the last 2 years or completion of a Technician program with at least one year of work experience in the last 2 years; or certification (CRTT) by the National Board of Respiratory Care with at least 3 years of work experience in the last 5 years. Must be taken concurrently with RT 235. Emphasis will be upon material in RT 116, 133, and 134. Successful completion of this course and RT 235 will enable technicians to enter the second year of the therapist program. Will only be offered if space in the program permits. (30-0) SD

RT 207 Cardiopulmonary Pathophysiology 3 Sem Hrs
Prerequisites: RT 150 or RT 105 and RT 160 for the transition student. RT 211, RT 212, RT 214, RT 216, RT 229, RT 226 must be taken concurrently. Presents the cause, clinical presentation, and treatment of common cardiopulmonary diseases. (45-0) F

RT 211 Advanced Cardiopulmonary Physiology 3 Sem Hrs
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 212, RT 214, RT 216, RT 229, & RT 226 must be taken concurrently. Presents the study of advanced cardiopulmonary physiology as the basis for evaluation and treatment of cardiopulmonary pathophysiology. (45-0) F

RT 212 Advanced Ventilator Management 2 Sem Hrs
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 214, RT 216, RT 229, & RT 226 must be taken concurrently. Presents the advanced theory and application of skills required to monitor, manage, and wean patients on mechanical ventilation. (26-8) F

RT 214 Seminar I 1 Sem Hr
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 216, RT 226, & RT 229 must be taken concurrently. Provides an opportunity to research, write a report, and make an oral presentation on an area of interest in the field of respiratory care. (15-0) F

RT 216 Rehabilitation and Home Care 1 Sem Hr
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 214, RT 229 and RT 226 must be taken concurrently. Presents the theory and application of skills required to provide pulmonary rehabilitation and home care. (13-4) F

RT 226 Clinical Education III 6 Sem Hrs
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 214, RT 216, & RT 229 must be taken concurrently. Provides the opportunity to review the theory and practice clinical skills. (0-240) F

RT 229 Clinical Ed 3 Seminar 1 Sem Hr
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 214, RT 216, and RT 226 must be taken concurrently. Provides the opportunity to integrate the classroom and clinical activities of the concurrent courses in a seminar format. F (15-0)

RT 231 Maternal and Neonatal Respiratory Care 2 Sem Hrs
Prerequisite: RT 207, 211, 212, 214, and 216 each with a C (2.0) minimum grade. This course will cover the respiratory changes in the mother during pregnancy, labor, and delivery. Fetal development, the birth process, cardiovascular and respiratory changes after birth, neonatal pathophysiology and neonatal ventilators are also covered. (27-6) WD

RT 234 Seminar II 1 Sem Hr
Prerequisites: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 240, RT 244 and RT 246 must be taken concurrently. Provides an opportunity to research, write a report, and make an oral presentation on any area of interest in the field of respiratory care. (15-0)W

RT 240 Advanced Respiratory Care Pharmacology 3 Sem Hrs
Prerequisite: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 234, RT 244 and RT 246 must be taken concurrently. Presents the theory and application of advanced respiratory care pharmacology as it relates to cardiopulmonary pathophysiology. (45-0) W

RT 244 Optional Rotation/Special Project 1 Sem Hr
Prerequisites: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 240, RT 234, and RT 246 must be taken concurrently. Provides an opportunity to choose a rotation or special project to meet their personal goals in the field of respiratory care. Emphasizes the design, completion, and summarization of the project. (15-0) W

RT 246 Comprehensive Clinical Education 8 Sem Hrs
Prerequisites: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 240, RT 234, and RT 244 must be taken concurrently. Provides the opportunity to apply all of the knowledge and skills presented in the program. Emphasizes the integration of all levels of knowledge and skills as a prelude to functioning as a graduate respiratory therapist. (0-320) W

RT 290-299 Special Projects in Respiratory Care O

RUS 111 Russian One 4 Sem Hrs
Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written Russian by means of oral practice, reading of simple texts, and written exercises. (60-0) O

RUS 112 Russian Two 4 Sem Hrs
Prerequisite: RUS 111 or one year of high school Russian. Continuation of RUS 111. (60-0) O

RUS 211 Russian Three 4 Sem Hrs
Prerequisite: RUS 112 or two years of high school Russian. Continued emphasis placed on proper pronunciation habits and application of grammatical structures of modern spoken and written Russian by means of oral exercises, conversations, reading of Russian prose, and written exercises. As much as possible this class is conducted in Russian. (60-0) O

RUS 212 Russian Four 4 Sem Hrs
Prerequisite: RUS 211 or its equivalent. Continuation of RUS 211 with more emphasis on conversation and composition. (60-0) O

RUS 290-299 Special Projects in Russian O

INTERDISCIPLINARY SCIENCE COURSES

SCI 099 Foundation for Science 4 Sem Hrs
Develops competency in content and skills in college science classes and intended for students unsure of adequacy of preparation for college science. Includes use of scientific method, measurement practices in metrics, communicating and presenting scientific data, classification techniques, spatial relationships, and maps. Presents methods for improving science study skills, note taking, data recording and analysis. (Cannot be counted toward Natural Science or lab credit.) Credit may be earned in SCI 099 or in SCI 100 but not both. (75-15)

SCI 100 Foundation Science 4 Sem Hrs
Develops competency in content and skills in college science classes and intended for students unsure of adequacy of preparation for college science. Includes use of scientific method, measurement practices in metrics, communicating and presenting scientific data, classification techniques, spatial relationships and maps. Presents methods for improving science study skills, note taking, data recording and analysis. (Cannot be counted toward Natural Science or lab credit.)

SCI 250 Research Project in Science 2-6 Sem Hrs
Prerequisites: CHM 112 or CHM 230. Designed to provide science student with opportunity to design, carry out a science research project under the supervision of a faculty advisor. A research report will be prepared that includes a library search, problem identification, procedure documentation, data, data analysis, and conclusion. Evaluation will be handled by a team of faculty and/or experts. Credits awarded will be based on the nature of the project and its evaluation. Two credits are minimum requirement. Beneficial to all science majors in Biology, Chemistry, and Engineering. (30) N

RUSSIAN COURSES

RUS 104 Speaking Russian 2 Sem Hrs
The student will learn a number of simple, everyday expressions in Russian. Intensive practice of comments-inquiries-responses about name, age, nationality, family, work, etc. Expressions useful in hotels, restaurants, stores, transport systems, as well as in meeting people, will be included. The Russian alphabet will be introduced and practiced. (30-0) O

SURGICAL FIRST ASSISTANT COURSES

SFA 301 Advanced Surgical Anatomy I 3 Sem Hrs
Prerequisites: Admission to the Surgical First Assistant advanced course of study and concurrent enrollment in SFA 303 and 305. Regional study of anatomy related to surgical procedures; also includes review of relevant physiology and introduction to basic embryology, histology, and pathology. (45-0) W

SFA 303 Fundamental Techniques I**3 Sem Hrs**

Prerequisites: Admission to the Surgical First Assistant advanced course of study and concurrent enrollment in SFA 301 and 305. Theory of and basic skills practice in pre-operative, intra-operative and post-operative functions and techniques of a Surgical First Assistant. (30-30) W

SFA 305 Anesthesia and Surgical Pharmacology**2 Sem Hrs**

Prerequisites: Admission to the Surgical First Assistant advanced course of study and concurrent enrollment in SFA 301 and 303. Review of anesthetic agents and their methods of administration, drugs used during surgery, and emergency drugs, including adverse reactions; emphasis is on how the surgical procedure may be affected by the pharmacologic agents used. (30-0) W

SFA 312 Advanced Surgical Anatomy II**3 Sem Hrs**

Prerequisites: SFA 301 with a minimum C (2.0) grade and concurrent enrollment in SFA 314, 316, and 318. Continuation of SFA 301, Advanced Surgical Anatomy I. (45-0) S

SFA 314 Fundamental Techniques II**2 Sem Hrs**

Prerequisites: SFA 303 with a minimum C (2.0) grade and concurrent enrollment in SFA 312, 316, and 318. Continuation of SFA 303, Fundamental Techniques I. (30-0) S

SFA 316 Professional Conduct**1 Sem Hr**

Prerequisites: SFA 301, 303, and 305 with a minimum C (2.0) grade and concurrent enrollment in SFA 312, 314, and 318. Exploration of interpersonal, legal and ethical aspects of surgical patient care, recognition of surgical complications, and appropriate actions. (15-0) S

SFA 318 Applied Bioscience**3 Sem Hrs**

Prerequisites: SFA 301, 303, and 305 with a minimum C (2.0) grade and concurrent enrollment in SFA 312, 314, and 316. Examination of normal and pathological physiological processes as applied to measurement and intervention techniques in surgical patients; review of surgical microbiology and infection control. (45-0) SN

SFA 329 Clinical Preceptorship**10 Sem Hrs**

Prerequisites: SFA 301, 303, 305, 312, 314, 316, and 318 each with a minimum grade of C (2.0) and consent of clinical coordinator. Clinical practice of basic surgical skills and techniques for Surgical First Assistants by individual assignment to a qualified preceptor surgeon who will provide direct supervision during each of six rotations; to include minimum number of major and minor cases in general surgery, orthopedic surgery, peripheral vascular surgery, endoscopic procedures, and two electives. A statement of proficiency from each supervising preceptor is required upon completion of each rotation. (0-315) F

SIGN LANGUAGE COURSES**SL 111 Sign Language I****3 Sem Hrs**

Designed for people who have no knowledge of sign language. Introduces the student to American Sign Language, the language many deaf or hearing impaired adults use. Brief discussions of deaf culture are incorporated throughout the course. (45-0) FWS

SL 112 Sign Language II**3 Sem Hrs**

Prerequisite: SL 111 or demonstrated basic knowledge of American Sign Language. A continuation of SL 150, designed to give students a broader sign vocabulary while increasing their conversational fluency. (45-0) WS

SL 121 Sign Language III**3 Sem Hrs**

Prerequisite: SL 112 or demonstrated knowledge of American Sign Language. Builds upon skills, knowledge, and vocabulary gained in SL 111 and 112. During this course students will be asked to use their skills in the community. (45-0) O

SL 290-299 Special Projects in Sgin Language O**SOCIOLOGY COURSES****SOC 157 Projects in Community Service****1 Sem Hr**

Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158 and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-30) EFW

SOC 158 Projects in Community Service**2 Sem Hrs**

Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158, and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-60) EFW

SOC 159 Projects in Community Services**3 Sem Hrs**

Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working will populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158, and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-90) EFW

SOC 205 Economic Perspectives on Social Issues**3 Sem Hrs**

Uses basic economic principles and analysis to provide insight into social issues. Explores the role of economics in the analysis of social issues. Includes topics such as health care, environmental cleanup, income distribution, and government debt. Credit can be earned in SOC 205 or ECN 205 but not both. (45-0)

SOC 211 Principles of Sociology**3 Sem Hrs**

An introduction to the scientific study of society and social behavior including the basic concepts, theories, and methods of sociology. (45-0)

SOC 212 Social Problems**3 Sem Hrs**

Prerequisite: SOC 211. An analysis of contemporary social problems within the theoretical framework of social change, value conflicts, and social deviation; an attempt to examine resulting implications for social policy. (45-0) FW

SOC 214 Sociology of Substance Abuse**3 Sem Hrs**

Prerequisite: SOC 211. A survey of the problem of substance abuse in contemporary society including its scope, distribution, and direct and indirect effects on society. Responses to the problem of substance abuse by business, industry, education, medicine, and the legal profession will be explored. (45-0) EO

SOC 215 Sociology of Minority Groups (Inter-group Relations)**3 Sem Hrs**

Prerequisite: SOC 211. A sociological approach to study of prejudice and discrimination against minority groups, primarily in the United States. The emphasis is upon the analysis of both causes and solutions to the problems of prejudice and discrimination. (45-0) O

SOC 216 The Black Experience**4 Sem Hrs**

A survey course presenting several aspects of Black life using an interdisciplinary approach. The major units of study are Black culture, power and politics, Black family, business and economic development, and Black psychology. Each component will present an historical analysis as well as an overview of contemporary research and/or thought in the field. (60-0) O

SOC 221 Marriage and Family**3 Sem Hrs**

Prerequisites: SOC 211 or SOC 231 or PSY 211 or permission of instructor. A study of the family as an institution in society. Broad research approach encompassing aspects of historical and cross societal evidence of this institution as well as contemporary American pairing and child rearing practices. (45-0)

SOC 230 Physical Anthropology and Archeology 4 Sem Hrs
An introduction to the origin and evolution of humankind's physical and cultural development. Major emphases are on the evidence and theories of human evolution and a survey of Old World and New World archeology. This course may be taken as Social Science or Natural Science credit but cannot be counted as a lab science course. (60-0) DFW

SOC 231 Cultural Anthropology 3 Sem Hrs
An introduction to humanity in its cultural setting. An emphasis will be given to the study of a diversity of non-industrialized cultures and the implications of that study for understanding our own culture. (45-0) DFW

SOC 233 Archaeology Field Methods 2 Sem Hrs
Provides students with a guided field experience in the basic techniques of land site analysis. Introduces commonly used methods of surveying and mapping; excavation; dating; artifact and ecofact identification and conservation; data recording, including photography and scaled drawing; and site interpretation. Examines criteria for selecting techniques appropriate to specific site conditions. Emphasizes the Michigan prehistoric and historic context. Credit may be earned in HIS 233 or SOC 233 but not in both. (30-0)

SOC 245 Death Education 3 Sem Hrs
Concerned with an analysis of the nature of death. Attention is given to some of the philosophical, religious, cultural, biological, psychological, sociological, economic and legal aspects of death and dying. (45-0) DFW

SOC 250 Introduction to Social Work 3 Sem Hrs
An introduction to social work as a helping profession within the field of human services. Social work values, practice strategies, and helping skills will be treated in the context of the social welfare institution. Students planning to transfer to a four-year social work program may also need to take either SOC 157, 158 or 159 to meet the experience requirement necessary for admittance to the social work program at transfer institutions. (45-0) E

SOC 265 Third World Development 4 Sem Hrs
An interdisciplinary description and analysis of processes and conditions which created and maintain the "third world." Population, physical environment, historical, political, social and economic factors will be addressed. Current concepts and development theories will be explored and applied. Credit may be earned in SOC 265 or GEO 255 but not in both. (60-0) W

SOC 268 International Studies in Sociology 1-4 Sem Hrs
The student will select a major institution of society for the purpose of comparative study. An analysis and comparison of that institution in preselected societies will be the major focus of the course. Includes classroom lectures, individual consultation and international field study. Expenses for field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take International studies in the following disciplines: GEO 268, ECN 268, GB 268. (60-0) O

SOC 271 Religion and Society 3 Sem Hrs
An examination of religion as a social institution and cultural belief system including a survey of major world religions such as Judaism, Christianity, Islam, Hinduism, Buddhism, Confucianism, indigenous American religions and new religious movements. Cross-societal material is presented to enhance understanding the common elements of religious systems as well as their diversity. Various theoretical approaches to the study of religion are considered in order to analyze the functions of religion in human societies. (45-0)

SOC 275 Sociology of Stress 3 Sem Hrs
Designed to help students understand stress as a built-in characteristic of the world in which they live and to learn ways in which stress may be managed to bring about individual growth. Pervasive stressors in everyday life, stress tolerance, linkages between stress and physical and emotional illness, and the value of individual coping patterns will be examined in the course. A range of stress management strategies will be explored. (45-0)

SOC 279 Introduction to Social/Behavioral Science Research 3 Sem Hrs
Prerequisite: One of the following courses ECN 221, POL 103, POL 111, PSY 211, SOC 211 or permission of instructor. Introduces social and behavioral research utilizing a multi disciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. (45-0) S

SOC 280 Introduction to Social/Behavioral Science Research/Project 4 Sem Hrs
Prerequisite: One of the following courses ECN 221, POL 103, POL 111, PSY 211, SOC 211 or permission of instructor. Introduces social and behavioral research utilizing a multidisciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. Includes a research paper. (60-0) S

SOC 281 An Introduction of SPSS 1 Sem Hr
Prerequisite: Some statistics or research background or taking such a course, e.g., SOC 280, concurrently. Introduces the Statistical Package for the Social Sciences (SPSS), a comprehensive set of statistical tools for many types of data analysis. Emphasizes the basic procedures, commands, and tools of SPSS. Credit may be earned in SOC 281 or CPS 108 but not in both. (15-0) O

SOC 282H Seminar in Social Issues 3 Sem Hrs
Prerequisite: Honors program participant or permission of instructor. An integrated study involving exploration and development of critical thinking, analysis and problem-solving skills with an interdisciplinary approach focusing on a selected social issue. (45-0) WD

SOC 290-299 Special Projects in Sociology O

SPANISH COURSES

SPA 101 Hispanic Civilizations 2 Sem Hrs
An introduction to some basic concepts concerning educational systems, religious thought, marriage customs, attitudes toward death, role of man and woman, historical highlights, cultural and natural resources, and relevant contributions in the area of art, music, literature, foods, and clothing of the Spanish-speaking world (Europe, the Americas, and the U.S.A.). Course will be conducted in English. (30-0) O

SPA 105 Conversational Spanish - Introduction 2 Sem Hrs
Prerequisite: No previous formal study of Spanish. Designed to emphasize the acquisition of oral skills. Successful completion of SPA 105 and 106 is considered equivalent to the successful completion of Spanish One. (30-0) FSW

SPA 106 Conversational Spanish - Continuation 2 Sem Hrs
Prerequisite: SPA 105 or permission of instructor. A continuation of SPA 105 with more emphasis on reading and writing Spanish. Successful completion of SPA 105 and 106 is considered equivalent to the successful completion of Spanish One. (30-0) O

SPA 107 Spanish for Medical Personnel 1 Sem Hr
An introduction to conversational Spanish for medical personnel maximizing specific information, but holding the structure and extended vocabulary to just that need for basic communication. Handouts and audio-tapes will reinforce the material covered in class. (15-0) O

SPA 111 Spanish One 4 Sem Hrs
Prerequisite: No previous formal study of Spanish. Acquisition of proper pronunciation, Basic grammatical structures and vocabulary of modern spoken and written Spanish by means of oral-aural practice, reading of simple texts, and written exercises. (60-0) FWS

SPA 112 Spanish Two 4 Sem Hrs
Prerequisite: One year of high school Spanish or SPA 111. Continuation of SPA 111. (60-0)

SPA 211 Spanish Three 4 Sem Hrs
Prerequisite: Two years of high school Spanish or SPA 112. Continued emphasis placed on proper pronunciation habits and on application of grammatical structures of modern spoken and written Spanish by means of oral-aural exercises, conversations, reading of Spanish prose, and written exercises. As much as possible, this class is conducted in Spanish. (60-0) O

SPA 212 Spanish Four 4 Sem Hrs
Prerequisite: SPA 211 or three years of high school Spanish. continuation of Spanish Three. (60-0) O

SPA 268 International Studies in Spanish 1-4 Sem Hrs
Studies ancient, colonial and modern civilization in a Spanish-speaking country. Visits archeological and historical sites with unassigned time for individual interests. Student must meet all course and travel requirements in addition to paying tuition and expenses. (15/60/0) O

SPA 268A Central Mexico 2 Sem Hrs
Studies ancient, colonial and modern civilization in a Spanish-speaking country. Visits archeological and historical sites with unassigned time for individual interests. Student pays tuition plus all expenses. Credit may be earned in SPA 268A or 150, but not both. (30-0) O

SPA 268B Mayan Mexico 2 Sem Hrs
Studies ancient, colonial and modern civilization in a Spanish-speaking country. Visits archeological and historical sites with unassigned time for individual interests. Student pays tuition plus all expenses. Credit may be earned in SPA 151 or 268B, but not both. (30-0) O

SPA 275 Introduction of Hispanic Fiction 3 Sem Hrs
Prerequisite: Ability to speak and read Spanish (completion of fourth year of high school Spanish or fourth semester of college Spanish, or permission of the instructor). Reading, research, and discussion based on a study of representative literature of the Hispanic world (Europe, North America, and South America). Students will read, discuss, and write about three selected novels and/or plays under guided supervision. Course will be conducted in Spanish. (45-0) O

SPA 290-299 Special Projects in Spanish O

SPEECH/ORAL COMMUNICATIONS COURSES

SPH 100 Basic Communication Skills 3 Sem Hrs
Designed to improve language awareness. The following will be emphasized: self assessment/peer evaluation, oral expression, small group interaction, vocabulary enrichment and grammar skills. (45-0) FW

SPH 112 Fundamentals of Oral Communication 3 Sem Hrs
The course offers training in the fundamental processes of oral expression, with an emphasis on speaking and listening as the coordination of perception and expression. The basic principles, components, and skills that will aid the individual in various communication situations are stressed. (45-0) FWS E

SPH 114 Interpersonal Communications 3 Sem Hrs
An introduction to the process of functions of perception, non-verbal behavior, self-concept roles and culture on human interaction in varying social settings. Emphasis is placed on helping the students increase their competence as a communicator in these situations. Various concepts on communication behavior are applied in the classroom. (45-0) FWS E

SPH 160 Public Scripture Reading 1 Sem Hr
Provides practical, non-denominational communication skills and experience in the use of various techniques, literary approaches and technical devices to enhance proclamation of Scripture. (15-0) O

SPH 202 Oral Communications for Managers 3 Sem Hrs
Managers manage things; leaders lead people. This course focuses on organizational behavior; management behavior styles and team building; interpersonal communication; appraisal, disciplinary, motivational and counseling interviews; listening and nonverbal behavior; public speaking; and leadership and consensus decision making. Emphasis is placed on practical skills within the organization. (45-0) FW

SPH 212 Listening 3 Sem Hrs
Focus will be on the theory, behavior, and skills of listening. Course material will include discussion of: listener/speaker responsibility; physiological and psychological processes of listening; barriers and control methods; improvements; and the five types of listening devoted to nonverbal behavior with regard to seeing as listening. Persons who attain success in this course should benefit both interpersonally and professionally. (45-0) FW

SPH 214 Discussion Techniques 3 Sem Hrs
Prerequisite: A previous speech course or permission of the instructor. Designed to explain discussion as a means to better understanding and action in human affairs and to develop attitudes and skills which enable people to participate in discussion competently. A study of group leadership. (45-0) O

SPH 215 Introduction to Theatre 3 Sem Hrs
Designed to give the student some insight into the various aspects of theatrical production. The purpose is to make the student a discriminating observer of dramatic production whether on stage, film, or the T.V. screen. Included in this study are play analysis and practical experience in acting, directing, scenery, and lighting. (45-0) FW

SPH 216 Theatre History 3 Sem Hrs
This class is devoted to introducing the student to the various historical areas of the theatre, from the ancient Greeks to the present. Emphasis is placed on the development of the physical theatre, representative playwrights, and the development of actor and the director. (45-0) O

SPH 217 Technical Theatre 3 Sem Hrs
Designed to acquaint the student with the technical aspects of theatrical production: i.e., set design/construction, lighting, sound, props. Instruction to be both lecture and practical lab. (45-0) O

SPH 218 Interpreter's Theatre 3 Sem Hrs
Prerequisite: SPH 112 or permission of instructor. A study of theory and a practice of theatres of oral interpretation: readers' theatre, chamber theatre, multiple reading. Requires directing at least two productions. (45-0) O

SPH 219 The Art of Story Telling 3 Sem Hrs
Prerequisite: SPH 112 or permission of instructor. Provides the student with knowledge of the history of story telling. Gives experience in selecting literature and material for story telling. Provides practice in literature by reading aloud and story telling. The student will be required to perform in five categories of story telling. (45-0) O

SPH 224 Nonverbal Communication 3 Sem Hrs
Focuses on nonverbal communication as it relates to interpersonal social, business and professional behavior. Analyzes kinesics, facial affect, eye contact, body movement and posture, physical characteristics, haptics, chronemics, proxemics, artifacts and environment. Also discusses the prevalent theories underlying nonverbal behavior. (45-0) O

SPH 290-299 Special Projects in Speech/Oral Communications O

SURGICAL TECHNOLOGY COURSES

ST 100 Introduction to Health Care Service 3 Sem Hrs
Prerequisite: BIO 132 or concurrent enrollment in BIO 132. Presents the history of medicine, epidemiological methods, and current problems and trends in the health care system. Selected global health care issues are discussed. Includes professional, legal, and ethical aspects of a multi disciplinary care system. (45-0) W

ST 107 Pharmacology in the Operating Room 2 Sem Hrs
Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 110, 120, 130, 140. Introduction to anesthetic agents and other drugs commonly used in the operating room: their actions and uses, how they affect a surgical patient and how to observe for untoward reactions. (30-0) FD

ST 110 The Surgical Patient 2 Sem Hrs
Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 120, 130, 140. Basic concepts of operative patient care, such as preparation of patient for surgery, patient transportation, surgical incisions, wound healing, operative records, special procedures in the operating room, and the legal, moral and ethical responsibilities of surgical care. (30-0) FD

ST 120 Fundamentals of Surgical Technology 6 Sem Hrs
Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 110, 130, 140. Roles of surgical team members, sterilization and disinfection methods, surgical instruments, sutures and equipment, electrical safety, patient positioning and preparation, draping the sterile field, and care of supplies. Students begin to develop technical skills through laboratory practice; later operating room observational experiences are provided. (45-120) FD

ST 130 Surgical Anatomy 4 Sem Hrs
Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 110, 120, 140. Comprehensive regional study of human anatomy as encountered during surgery. Provides the basis for studies of surgical pathology, operative procedures and practical skills of surgical patient care. (45-45) FD

ST 140 Operative Procedures 4 Sem Hrs
Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 110, 120, 130. Selected commonly-performed types of surgical procedures; the pathology leading to surgical intervention, the purposes of the surgery, problems which may arise, and the consequences of the surgery for the patient will be discussed in addition to the basic techniques utilized during the procedure and any special instrumentation. (60-0) FD

ST 200 Clinical Externship 12 Sem Hrs
Prerequisites: ST 107, 110, 120, 130, 140 each with a minimum C (2.0) grade and consent of program coordinator. Supervised clinical experience in hospital operating room suites. Clinical instructors will evaluate each student's progress in the theoretical, behavioral, and practical application of concepts of surgical technology. (0-540) WD

ST 201 Operating Room Seminar 3 Sem Hrs
Prerequisite: Concurrent enrollment in ST 200. Patient-monitoring devices and diagnostic tests, abnormalities and correlations with surgical patient conditions, and surgery for traumatic injuries. Discussion of students' clinical experiences, the professional role of the Surgical Technologist, general review, and assigned research studies. (45-0) WD

ST 290-299 Special Projects in Surgical Technology O

SKILLED TRADES COURSES

SKCA 114 AutoCAD Introduction 2 Sem Hrs
Prerequisite: SKDR 101 or permission of department. AutoCAD software used to draft two dimensional multiview drawings and three dimensional wire frame constructions. Completed projects include arrays, blocks, assigned properties, notations, and dimensions. Knowledge of the software, hardware and the MS-DOS operating system is acquired in the process of developing a Computer Aided Design and Drafting drawing for multi-pen plotting. Credit may be earned in either SKCAD 114 or CAD 114 but not both. (30)

SKCN 160 Computer Numerical Control Programming I 3 Sem Hrs
Prerequisites: MS 114 or SKTR 181, and MATH 103 or MT 110 or SKMA 103, or basic knowledge of machining processes and trigonometry. Primary emphasis will be on manually programming machines with various capabilities, including absolute and incremental positional systems; tab sequential, word address, and menu driven formats; and machines with two-, three-, four-, and five-axis control. Secondary emphasis on computer assisted programming. Credit may be earned in SKCN 160 or CNC 160 but not both. (45)

SKCN 161 Computer Numerical Control Programming II 3 Sem Hrs
Prerequisites: CNC 160 or SKCN 161. Advanced training in computer assisted programming methods for computer numerical control machines. Teaches various programming languages with emphasis on Compact II. Credit may be earned in SKCN 161 or CNC 161 but not both. (45)

SKCN 211 Mitsubishi 410 Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using Mitsubishi 410 EIA/ISO language, including tooling setups, and machining with secondary emphasis on parameters and maintenance. Uses Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for demonstration and lab activities. Credit may be earned in CNC 211 or SKCN 211 but not in both. (57-3,40 OJT)

SKCN 212 Heidenhain TNC-151 Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teached program methodology to produce quality parts using the Heidehain TNC-151 Dialog or EIA/ISO languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 212 or CNC 212 but not in both. (57-3, 40 OJT)

SKCN 213 OSP-5000 LG Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the OSP-5000 LG EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for demonstration and lab activities. Credit may be earned in SKCN 213 or CNC 213 but not both. (57-3, 40 OJT)

SKCN 214 Anilam GXM Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the Anilam GXM EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 214 or CNC 214 bur not in both. (57-30,40 OJT)

SKCN 215 General Numeric 10TF Control 4 Sem Hrs
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teached programming methodology to produce quality parts using the General Numeric 10TF EIA/ISO and conversational languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 215 or CNC 215 but not in both. (57-3,40 OJT)

SKCN 217 Japax JAPT 3J Control**4 Sem Hrs**

Prerequisites: CNC 212 or SKCN 212, or CNC 214 or SKCN 214, or CNC 216 or SKCN 216 or prior experience. Teaches the programming methodology for producing quality parts using the JAPT 3J EIA/ISO language, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 217 of CNC 217 but not in both. (57-3,40 OJT)

SKCN 218 Boston Digital SPC-II Control**4 Sem Hrs**

Prerequisite: CNC 216 or SKCN 216, or prior experience. Teaches programming methodology to produce quality parts using the Boston Digital SPC-II EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Boston Digital BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 218 or CNC 218 but not in both. (57-3,40 OJT)

SKCN 221 Surfcam I**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming experience. Teaches off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC and able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Surfcam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 221 or CNC 221 but not in both. (54-3, 40 OJT)

SKCN 222 E-Z CAM IV**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for 2-D mill work, operating on a PC and downloading to the Heidehain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Teaches the creation of error free part programs using E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 222 or CNC 222 but not in both. (57-3,40)

SKCN 223 TM-APT-GL**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work, operating on an Okuma TM-APT-G programming terminal downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 223 or CNC 223, but not both. (57-3,40 OJT)

SKCN 224 Anicam**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160 and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anilam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP MTC-3 turning center, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 224 or CNC 224 but not in both. (57-3, 40 OJT)

SKCN 225 Mastercam**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160 and CIS 118 or equivalent programming experience. Uses an off-line programming software for up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as some other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 225 or CNC 225 but not in both. (57-3,40 OJT)

SKCN 226 CAM M-32/M-2**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches programming methodology to produce error free programs using the Mazak M-32/M-2 EIA/ISO programming language on a PC with secondary emphasis on tooling setups, part setups, machining, and downloading to the Mazak VQC-15/40 M-2 four-axis double column vertical machining center using the Mazak CAM M-2 Programming software. Credit may be earned in SKCN 226 or CNC 226 but not in both. (57-3,40 OJT)

SKCN 227 XL/NC**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC downloading to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 227 or CNC 227 but not in both. (57-3,40 OJT)

SKCN 228 Nicam IV**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Uses off-line programming software for up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system. Credit may be earned in SKCN 228 or CNC 228 but not both. (57-3,40 OJT)

SKCN 229 Expedite 3-D**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Teaches off-line programming software for up to four-axis lathe work and up to five-axis mill work, operating on a PC and able to download to the SPC-II control on the BostoMatic machining system, as well as other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 229 or CNC 229, but not both. (57-3,40 OJT)

SKCN 251 Mitsubishi 410 Control, Advanced**4 Sem Hrs**

Prerequisite: CNC 211 or SKCN 211, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Mitsubishi 410 EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for lab and demonstration. Credit may be earned in SKCN 221 or CNC 221 but not in both. (57-3,40 OJT)

SKCN 252 Heidenhain TNC-151 Control, Advanced 4 Sem Hrs
Prerequisite: CNC 212 or SKCN 212, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 222 or CNC 222 but not in both. (57-3, 40 OJT)

SKCN 253 OSP-5000 LG Control, Advanced 4 Sem Hrs
Prerequisite: CNC 213 or SKCN 213, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the OSP-5000 LG EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis is on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 223 or CNC 223 but not in both. (57-3, 40 OJT)

SKCN 254 Anilam GXM Control Advanced 4 Sem Hrs
Prerequisite: CNC 214 or SKCN 214, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Anilam GXM EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 224 or CNC 224 but not in both. (57-3, 40 OJT)

SKCN 255 General Numeric 10TF Control Advanced 4 Sem Hrs
Prerequisite: CNC 215 or SKCN 215, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the General Numeric EIA/ISO and conversational control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 225 or CNC 225 but not in both. (57-3, 40 OJT)

SKCN 256 Mazatrol M-32/M-2 Control, Advanced 4 Sem Hrs
Prerequisite: CNC 216 or SKCN 216, or equivalent programming experience. Teaches canned cycles, subprograms, and programming from CAD files using the Mazak M-32/M-2 conversational programming language with secondary emphasis on parameters and maintenance. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for lab and demonstration. Credit may be earned in SKCN 256 or CNC 256 but not in both. (57-3, 40 OJT)

SKCN 257 Japax JAPT 3J Control Advanced 4 Sem Hrs
Prerequisite: CNC 217 or SKCN 217, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the JAPT 3J EIA/ISO control, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 227 or CNC 227 but not in both. (57-3, 40 OJT)

SKCN 258 Boston Digital SPC-II Control Advanced 4 Sem Hrs
Prerequisite: CNC 218 or SKCN 218, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the Boston Digital SPC-II EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 228 or CNC 228 but not in both. (57-3, 40 OJT)

SKCN 261 Concept Advanced 4 Sem Hrs
Prerequisites: CNC 221 or SKCN 221, or equivalent programming experience. Teaches the advanced powers of Concept software for more intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Concept programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 261 or CNC 261 but not both. (57-3, 40 OJT)

SKCN 262 EZ CAM IV ADVANCED 4 Sem Hrs
Prerequisites: CNC 222 or SKCN 222, or equivalent programming experience. Teaches the advanced powers of E-Z CAM IV software for more intricate programming of 2-D mill work, operating on a PC and downloading to the Heidenhain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Emphasizes the creation of error free part programs using the E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 262 or CNC 262 but not both. (57-3, 40 OJT)

SKCN 263 TM-APT-GL ADVANCED 4 Sem Hrs
Prerequisites: CNC 223 or SKCN 223, or equivalent programming experience. Teaches the advanced powers of TM-APT-GL software for more intricate programming of two-axis lathe work, operating on an Okuma TM-APT-G programming terminal and downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 263 or CNC 263 but not both. (57-3, 40 OJT)

SKCN 264 Anicam Advanced 4 Sem Hrs
Prerequisites: CNC 224 or SKCN 224, or equivalent programming experience. Teaches the advanced powers of Anicam software for more intricate programming of two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anicam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 264 or CNC 264 but not both. (57-3, 40 OJT)

SKCN 265 Mastercam Advanced 4 Sem Hrs
Prerequisites: CNC 225 or SKCN 225, or equivalent programming experience. Teaches the advanced powers of Mastercam software for more intricate programming of up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 265 or CNC 265 but not both. (57-3, 40 OJT)

SKCN 266 Advanced Cam M-32/M2 4 Sem Hrs
Prerequisites: CNC 226 or SKCN 226, or equivalent experience. Teaches the use of macros, macro programming methodology, macro call statements, and nesting using the Mazak M-32/M-2 EIA/ISO programming language with secondary emphasis on parameters and maintenance. Software is ASCII text editor and a Griffio Brothers, Inc. GB\DataEntry M-32, GB\GeoEntry M-32, GB\DataTransfer, GB\DataPrint M-32, and GB\DataTranslate M-32 running on a PC. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for demonstration and lab. Credit may be earned in SKCN 266 or CNC 266 but not both. (57-3, 40 OJT)

SKCN 267 XL/NC ADVANCED**4 Sem Hrs**

Prerequisites: CNC 227 or SKCN 227, or equivalent programming experience. Teaches advanced powers of the XL/NC software for intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 267 or CNC 267 but not both. (57-3,40 OJT)

SKCN 268 Nicam IV Advanced**4 Sem Hrs**

Prerequisites: CNC 228 or SKCN 228, or equivalent programming experience. Teaches the advanced powers of the NICAM IV software for intricate programming of up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the S2PC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system. Credit may be earned in SKCN 268 or CNC 268 but not both. (57-3,40 OJT)

SKCN 269 Expedite 3-D Advanced**4 Sem Hrs**

Prerequisites: CNC 229 or SKCN 229, or equivalent programming experience. Teaches advanced powers of the Expedite 3-D software for intricate programming of up to four-axis lathe work and up to five-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 269 or CNC 269 but not both. (57-3,40 OJT)

SKCN 270 ACU.CARV Advanced**4 Sem Hrs**

Prerequisite: CNC 230 or SKCN 230, or equivalent programming experience with the ACU.CARV software. Teaches advanced powers of the ACU.CARV software for more intricate programming of up to five-axis mill work and up to four-axis wire EDM work, operating on a PC and downloading to the JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, as well as some of the other prismatic machining equipment. Emphasizes the creation of error free part programs using the ACU.CARV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill, machining center/system, or wire EDM. Credit may be earned in SKCN 270 or CNC 270 but not both. (57-3,40 OJT)

SKCN 280 ACU.CARV ADS Off-Line Programming System**4 Sem Hrs**

Prerequisite: CNC 270 or SKCN 270, or previous programming experience with AutoCAD and ACU.CARV softwares. Emphasizes the use of AutoCAD and ACU.CARV ADS softwares to create surfaces and tool paths for programming of up to five-axis mill work and up to four-axis wire EDM work. Includes the downloading of error-free PC created programs to JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, as well as some other prismatic machining equipment. Credit may be earned in CNC 280 or SKCN 280 but not in both. (57-3,40 OJT)

SKCT 101 Industrial Millwright Procedures**3 Sem Hrs**

Prerequisite: SKDR 101. A course for millwrights emphasizing blueprint reading, layout of typical industrial construction, equipment, and safety and guarding. Topics covered include plan and elevation prints of building footings and foundation, mechanical services, equipment and machinery foundations, ventilation systems, catwalks, decking, platforms, and various conveying systems. (45)

SKCT 102 Building Materials**3 Sem Hrs**

To learn development, properties, and composition of various building materials. To develop perception for economical and appropriate application of building materials. To learn various sources of technical data about residential and industrial building materials. To develop skills of building material application. (45)

SKCT 105 Building Site Surveying**3 Sem Hrs**

Prerequisite: SKCT 114. Course designed to introduce students to the tools and instruments used for surveying. Methods and procedures of developing and building layout are also included. (45) O

SKCT 106 Concrete and Foundations**4 Sem Hrs**

Prerequisite: SKCT 102. A study of the practical methods and procedures of preparing and setting concrete forms for such areas as basement floors, garage floors, driveways, sidewalks, patios, etc. (45-30) O

SKCT 111 Construction Print Interpretation**3 Sem Hrs**

Instruction in this course includes trade terminology and description of the various views of working drawings, pictorial drawings, and the basic procedures in development of these drawings. Also included is the interpretation of specifications and job information as they pertain to construction and layout. Credit may be earned in either SKCT 111 or RC 101 but not both. (45)

SKCT 113 Carpentry Math**2 Sem Hrs**

Prerequisite: Students scoring 19 or higher on the numerical skills portion of ASSET can waive this course. Acquaints student with basic mathematical processes relating to construction and includes practical demonstrations. Covers fractions, decimals, ratios and percentages. Credit may be earned in either SKCT 113 or RC 113 but not both. (30)

SKCT 114 Framing Square**3 Sem Hrs**

Prerequisite: RC 113, or a score of 19 or higher on the numerical skills portion of ASSET. The use of the framing square in construction. Credit may be earned in either SKCT 114 or RC 114 but not both. (45)

SKCT 201 Rough Framing and Outside Framing**4 Sem Hrs**

Prerequisite: SKCT 114. Instruction is given in the construction of techniques used in all phases of framing and exterior finishing. (30-60) O

SKCT 204 Inside Finishing and Hardware**3 Sem Hrs**

Prerequisite: SKCT 114. Instruction includes principles of interior construction, joinery and installation, and finishing of all types of interior trim. (45-30) O

SKCT 205 Cabinet Making and Millwork**5 Sem Hrs**

Prerequisite: SKCT 204. A study is made of the construction of, the placement of, and installation procedures of cabinets used in residential and commercial building. (45-60) O

SKDR 101 Sketching and Blueprint Reading**4 Sem Hrs**

Topics include: The graphic language and design, lettering, sketching, and shape descriptions, multiview projections, sectional views, auxiliary views, shop processes, thread fasteners and springs, and print reading of typical shop blueprints. (60)

SKDR 111 Drawing II**3 Sem Hrs**

Prerequisite: SKDR 101. A continuation of SKDR 101. Topics include multiview and pictorial sketching and drawing, sections drawing, dimensioning and tolerancing. (45) FW

SKDR 121 Descriptive Geometry**3 Sem Hrs**

Prerequisite: SKDR 111. Topics include orthographic projections, primary auxiliary views and lines, planes, successive auxiliary views, piercing points, intersection of planes, and angle between planes. (45) O

SKDR 128 Geometric Tolerancing**2 Sem Hrs**

Prerequisite: SKDR 111 or permission of department. Primary emphasis is on geometric symbols used in place of written notes on industrial drawings including datums, symbols, and other items tolerancing to the geometry of the part. Credit may be earned in either SKDR 128 or DRF 128 but not both. (30) O

SKDR 130 Tool and Die Design**4 Sem Hrs**

Prerequisite: SKDR 111. Topics include: design of jigs and fixtures, design of gaging mechanisms, design of automatic tooling, machining cost calculations. The student will use this data to make class presentations with questions and answer sessions. (60) W

SKDR 131 Pattern Design I**3 Sem Hrs**

Prerequisite: SKDR 111. Course covers terms and definitions of pattern design. Students will learn how to make calculations from tables and drawing, estimate weights from pattern charts and materials codes, and sketch and detail typical pattern designs. (45) W

SKDR 141 Pipe and Tube Isometrics**3 Sem Hrs**

Sketching course for industrial pipefitters includes all mensurations for layout and construction. (45) F

SKEL 101 Basic Electronics**6 Sem Hrs**

Prerequisite: SKMA 113. The first course in a series to train electrician apprentices in the theory and application of electronics to industrial control systems. Basic electronic devices will be discussed, along with how they work and their electrical characteristics. Simple electronic circuits will be set up on trainers to illustrate the application of the devices. Troubleshooting techniques and basic test instruments will be discussed and used. (90) F

SKEL 102 Industrial Electronics**4 Sem Hrs**

Prerequisite: SKEL 101. The second course in a series to train electrician apprentices in the theory and application of electronics to industrial control systems. Application of basic electronic devices to industrial control systems will be discussed. Major topics will be digital solid state logic and power control using SCR's and TRIAC's. Troubleshooting techniques and basic test instruments will be discussed and used. (60) W

SKEL 111 Conventional Controls**3 Sem Hrs**

Prerequisite: SKMA 111. Develops competencies in reading basic electrical blueprints and troubleshooting through familiarization of basic control devices. Develops visual and analytical relationships between the device and the corresponding blueprint configurations and symbols. Discusses and applies basic troubleshooting skills using the electropneumatic laboratory simulation training board. (45-0) W

SKEL 121 Advanced Controls I**4 Sem Hrs**

Prerequisite: SKEL 102. Topics include: vacuum and vapor tubes, resistance welding controls, induction heating, motors, invertors, polyphase rectifiers, op-amps transducers, instrumentation, closed loop controls, servo systems, temperature controls, troubleshooting. (75) F

SKEL 122 Advanced Controls II**4 Sem Hrs**

Prerequisite: SKEL 121. Present students with basic concepts and hands-on experience with programmable digital control systems. Emphasis placed on hardware, program (software) entry, R-T-C math, documentation, trouble-shooting, communication links (generic) and peripheral equipment. (60) W

SKEL 131 AC/DC Machinery**3 Sem Hrs**

Prerequisite: SKMA 113. This course is one in a series of courses on conventional industrial controls. Topics include physics of electromotive forces, armature reaction, induction, DC generator types, AC generators, DC motors, DC motor starters, transformers, AC motors and variable speed drive systems. (45) S

SKEL 141 Electrical Shop**3 Sem Hrs**

Prerequisite: SKEL 111 and SKEL 131. Develops competency in the application of the National Electrical code (NEC) and its relationship to industry and some residential wiring as written by the National Fire Protection Association (NFPA). Includes the Joint Industrial Council (JIC) standards for industrial electrical mass production operations and equipment. Emphasizes safety regarding hazardous locations, electrical grounding, ground faults, fusing, motor circuit protection and controls as well as electro-mechanical and hydraulic devices. (45)

SKET 106 Electricity I Applied**3 Sem Hrs**

Teaches students beginning electricity. Uses non-mathematical treatment of basic AC (alternating current) circuits. Includes introductory schematic symbols and circuits, Ohm's Law and Power formulas, series parallel and simple combinations circuits (not using Kirchoff, Thevenin, or Norton loop analysis), magnetism, electromagnetism, lighting and timing circuits. Includes hands-on circuit construction. Credit may be earned in RHA 140 or SKET 106 but not both. (45)

SKET 107 Electricity II Applied**2 Sem Hrs**

Prerequisite: SKEL 106. Designed to further the study of electrical applications. Students should have prior understanding of basic electrical terms, as well as some ability to solve problems in a series of parallel circuits. The course will provide an in-depth study of frequency, inductance, capacitance, three-phase power, peak-effective-average voltage, circuits that contain resistors, coils, and capacitors, lost power and power factor correction, and impedance. A review and pre-test will be given the first night of class. (30)

SKGM 162 Engine Service**5 Sem Hrs**

Prerequisite: GM Apprentice or GM Dealership sponsor. Emphasizes engine servicing, necessary for engine repair and maintenance. Includes the design, construction, and operation of gasoline and diesel engines. Credit may be earned in SKGM 162 or AGM 162 but not both. (35-105) F

SKGM 183 Specialized Electronics Training**4 Sem Hrs**

Provides the beginning technician with skills necessary for competent electrical fault isolation, system diagnosis, and repair. Credit may be earned in SKGM 183 or AGM 183 but not both. (60-12) F

SKGM 187 Electronic Engine Controls/Drivability**9 Sem Hrs**

Prerequisites: SKGM 162/AGM 162. Studies complete emission systems, fuel delivery functions, fuel injection, electronic ignition systems, engine tuneup and drivability. Emphasizes computerized engine control, and the use of accurate and complete methods in the diagnosis of engine performance complaints. Credit may be earned in SKGM 187 or AGM 187 but not both. (60 - 180) W

SKGM 260 Suspension Systems**5 Sem Hrs**

Prerequisites: GM Dealership Sponsor and SKGM 162 or AGM 162. Studies the nomenclature and operating principles of steering and suspension systems. Includes wheel alignment geometry, adjustment methods, and operation of alignment equipment with emphasis placed on methods of adjustment and repair necessary for quality steering and suspension service. Credit may be earned in SKGM 260 or AGM 260 but not both. (32-112) F

SKGM 272 Automatic/Electronic Transmissions**8 Sem Hrs**

Prerequisites: SKGM 162 or AGM 162. Studies the functional service skills for automatic transmissions and transaxles including nomenclature, fundamentals of operation, and diagnosis of malfunctions and electronic controls. Emphasizes use of special tools and equipment necessary in diagnosis and repair. Credit may be earned in SKGM 272 or AGM 272 but not both. (64-144) W

SKGM 284 Brake Systems**4 Sem Hrs**

Prerequisites: SKGM 160 & SKGM 162 or AGM 160 & 162. Studies service methods by understanding the nomenclature and operating principles of the hydraulic and mechanical systems of shoe and disc brake assemblies. Includes Anti-lock Brake, and Traction Control Systems with emphasis on repair procedures on brake system components necessary for quality and safe brake system servicing. Credit may be earned in SKGM 284 or AGM 284 but not in both. (25-75) S

SKGM 286 Drivelines and Manual Transmissions 3 Sem Hrs
Prerequisites: SKGM 162 or AGM 162. Studies nomenclature, fundamentals of operation, and diagnosis of malfunctions with emphasis on service operations of clutches, standard transmissions, standard transaxles, driveshafts, driveaxles, and differentials. Credit may be earned in SKGM 286 or AGM 286 but not both. (15-45) S

SKMA 101 Apprentice Mathematics I 2 Sem Hrs
Review of basic mathematics principles. Topics include: whole numbers, fractions, decimals, percents, metric system, operations of polynomials, rational numbers, polynomials, equations, exponents, and radicals. (30)

SKMA 102 Mathematics II 4 Sem Hrs
Prerequisite: SKMA 101. Introduction to algebra. Topics include: linear equations with applications, exponents and radicals, quadratic equations, ratio, proportion, and variation. (60) FW

SKMA 103 Mathematics III 4 Sem Hrs
Prerequisite: SKMA 102. Introduction to geometry and trigonometry. Topics include area and volume formulas with practical applications of screw, screw threads, belts, pulleys, gear wheels, and use of electronic calculator. (60) FW

SKMA 111 Applied Integrated Electrical Math I 6 Sem Hrs
Prerequisite: High School Algebra or Equivalent. Develops competency in the application of mathematics principles to electrical circuit configurations. Includes mathematical equations and formulas necessary to solve D.C. circuit applications applied to electrical, mechanical and process industrial control equipment. Covers non-mathematical theory related to electricity and electronics. (90)

SKMA 112 Applied Integrated Electrical Mathematics II 3 Sem Hrs
Prerequisite: SKMA 111. Develops further competency in the application of mathematics principles to electrical circuit configurations including DC and AC circuit applications. Includes trigonometry as applied to electrical-circuit theory and non-mathematical theory related to electricity and electronics. (45)

SKMA 113 Applied Integrated Electrical Math III 3 Sem Hrs
Prerequisite: SKMA 112. This course is the third in a series of electrical mathematics and circuit analysis intended to give an electrical apprentice the necessary background to maintain and service industrial control equipment. It will include a study of capacitance, capacitive reactance, vectors, phasors, series AC circuits, power factor and three-phase systems. Trigonometry and pythagorean mathematics will be used in the computation of the phase relationships of the various quantities studied. (45) S

SKMT 101 Hydraulics and Pneumatics I 3 Sem Hrs
Beginning course in oil and air fluid power systems commonly found in industry. Specifically the study of the physical description, function and application of components. Topics include pumps, compressors, actuators, valves, conditioners, instruments, air/oil components, fluid properties, and their representative graphic symbols. (45) FW

SKMT 102 Hydraulics and Pneumatics II 3 Sem Hrs
Prerequisite: SKMT 101. Advanced course in fluid power designed for machine repair, pipefitters and plumber trades. Analysis of common hydraulic and pneumatic components and circuits. Includes building of machine tool circuits and troubleshooting. Special systems such as hydrostatic transmissions and electrohydraulic servos, and ladder diagramming of pneumatic control circuits. Mathematics and graphic symbols used in troubleshooting. (45) WS

SKMT 111 Metals 3 Sem Hrs
Topics covered are temperature measurement by color, hardness, strengths, fatigue properties, steels, plastics, cast iron, copper, brass, bronze, aluminum, their applications with respect to wear, corrosion, and design. Credit may be earned in SKMT 111 or WELD 111 but not both. (45)WO

SKMT 112 Ferrous Heat Treatment 2 Sem Hrs
Designed to acquaint students with various forms of heat treatment applied to plain carbon steels, cast iron, alloy tool steel, and stainless steel. Course will also include steel classification and machinability. (30) O

SKMT 151 Power Transmission 3 Sem Hrs
Fundamentals of power transmission including bearings, chain drives, clutches and brakes, conveyor components, shaft couplings, flat belt drives, open gear drives, enclosed gear drives, electric motors, toothed belt drives, V-belt drives, variable speed drives, and specialties. (45) W

SKMT 161 Industrial Rigging and Safety 2 Sem Hrs
This course is a study of the methods of safe transfer of loads, It provides comprehensive, easy-to-understand, and reliable information of the entire field of rigging operations. It also discusses techniques and methods to accomplish the rigger's task with the greatest safety for all of the workers on a project, as well as for passers-by and the public in general. "Safety is no accident" is stressed. (30) FW

SKMT 171 Sheetmetal I 2 Sem Hrs
Develops geometrical structures; intersections by radial and triangulation methods of sheetmetal layout, the drawing of development layouts and the forming of actual models with sheetmetal. Credit may be earned in SKMT 171 or RHA 142, but not both. (30-30)

SKMT 172 Sheetmetal II 3 Sem Hrs
Prerequisite: SKMT 171. Continuation of Sheetmetal I. Projects involve fabrication of complex pieces to actual specification using tools common to the trade. (45) FW

SKMT 173 Sheetmetal III 3 Sem Hrs
Prerequisite: SKMT 172. Continuation of Sheetmetal Layout II. Emphasis placed on the layout and construction of patterns found in the industrial plant. Special projects will be assigned. (45) WS

SKMT 231 Fundamentals of Foundry Technology 3 Sem Hrs
Prerequisite: Foundry experience or permission of department. Provides an overview of all the components that make up a modern foundry. Participants will become familiar with the interrelationship between the metallurgy, melting, production engineering, core, molding, finishing, and reliability and quality control departments. Special emphasis is placed on how each department is dependent upon the other and what affect each has on the production of a quality product at a competitive cost, through the use of a statistical process control. (45) O

SKOT 191 Machine Controls I 3 Sem Hrs
Presents students with mechanical background the essentials of wiring and troubleshooting controls in production machinery. Studies AC/DC circuits, fundamentals of hydraulics and pneumatics as they pertain to machine control circuitry. Emphasizes relay ladder diagrams, simple debugging and nomenclature necessary to communicate with design engineers and other trades in the installation and troubleshooting of panel wiring. (45)

SKOT 192 Machine Controls II 3 Sem Hrs
Prerequisite: SKOT 191. Machine Controls II is a continuation of Controls I with special emphasis placed on diagnostic troubleshooting techniques. Primary objective of the course is to enable maintenance personnel to discuss machine functions or malfunctions with machine and control system designers. The course will also benefit toolmakers and machine builders to understand the overall operation of complex machinery they build and/or assemble. (45) O

SKPH 101 Applied Physics 4 Sem Hrs
Prerequisite: SKMA 103. Metric measurement, means of physical description, review of applied plane and solid geometry, matter, mechanical properties of solids, fluids, review of trigonometry as related to force and acceleration, static equilibrium energy and power related to ability to do work, friction and its effects, simple machines, hydraulic and pneumatic principles, fluids in motion, water and airwaves, temperature, heat transfer, electricity, magnetism and alternating currents. (60) FW

SKPT 101 Industrial Piping 4 Sem Hrs
Basic sanitation principles, terminology, materials classification, drainage systems, waste disposal system, pipe sizing and layout. Industrial piping situations involving gasoline, acid plating solutions, gases, safety, code requirements. (60) W

SKPT 106 Pipefitters Handbook 3 Sem Hrs
Prerequisite: SKMA 103. Review of mathematical calculations including geometry and trigonometry. Includes: pipe bends, linear expansion of piping, tank capacities, leverage, methods of layout angles, pipe-fitting calculations, pipe-welding layout, and reference tables. Credit may be earned in SKPT 106 or WELD 112 but not both. (45) S

SKPT 111 Stationary Boiler Engineering I 2 Sem Hrs
Orientation to power plant operations including boiler safety rules and regulations. General operating procedures for various types of boilers, uses and types of fuels and their sources; elementary chemistry of combustion. Credit may be earned in either SKPT 111 or CVI 1037 but not both. (30) F

SKPT 112 Stationary Boiler Engineering II 2 Sem Hrs
Prerequisite: SKPT 111 or permission of department. This course includes boiler settings, combustion equipment, operation and maintenance of boilers, pumps, reciprocating steam engines, valve operating mechanisms. Credit may be earned in SKPT 112 or CVI 1038 but not in both. (30) W

SKPT 113 Stationary Boiler Engineering III 2 Sem Hrs
Prerequisite: SKPT 112 or permission of department. Automatic boiler operation. Forced and induced draft systems. Steam turbines and auxiliaries, auxiliary steamplant equipment, cooling towers, boiler feed water treatment and heating. Credit may be earned in SKPT 113 or CVI 1039 but not in both. (30) F

SKPT 114 Stationary Boiler Engineering IV 3 Sem Hrs
Prerequisite: SKPT 113 or permission of department. This course includes air compressors of the following types: centrifugal, rotary screw, large reciprocating compressors and drives; boiler feed water chemical treatment. Credit may be earned in either SKPT 114 or CVI 1040 but not both. (30) W

SKPT 121 Refrigeration and Air Conditioning 3 Sem Hrs
Principles of air conditioning and heating. Content includes the basic refrigeration cycle, comfort cooling systems, trouble shooting, installation, selection of equipment, heating systems, control units, and humidifiers. Credit may be earned in either SKPT 121 or CVR 1001 but not both. (45) FW

SKPT 122 Domestic Refrigeration I: Household Units 3 Sem Hrs
Prerequisite: SKPT 121 and SKMA 111. Information needed to understand and repair dehumidifiers and air conditioners. Primary focus will be on hands-on troubleshooting both the electrical and sealed system components. Credit may be earned in either SKPT 122 or CVR 1002 but not both. (45)

SKPT 123 Commercial Refrigeration I 3 Sem Hrs
Prerequisite: SKPT 122. Information and hands-on tasks needed to properly install components and troubleshoot light commercial units. Credit may be earned in either SKPT 123 or CVR 1003 but not both. (45)

SKPT 124 Domestic Refrigeration II: Household Units 3 Sem Hrs
Prerequisite: SKPT 122 and SKMA 111. Troubleshooting domestic refrigeration systems. Primary focus will be on the electrical components and system parts in frost-free, conventional and cyclematic units. Credit may be earned in either SKPT 124 or CVR 1004 but not both. (45)

SKPT 125 Commercial Refrigeration II 3 Sem Hrs
Prerequisite: SKPT 123 and SKMA 111. Proper wiring of electrical controls and components in circuits and troubleshooting electrical problems. Credit may be earned in either SKPT 125 or CVR 1005 but not both. (45)

SKPT 126 Air Movement and Duct Design 3 Sem Hrs
Prerequisite: SKMT 123 or permission of department. A study of air handling for air conditioning, heating, and ventilation, including air duct design and psychometric problems of design and installation. (45) O

SKTR 181 Machine Tool I 2 Sem Hrs
Introduction to the industrial machine shop. Topics include: Safety, materials, hand tools, precision instruments, and purpose and operation of machine tools. (30) FW

SKTR 182 Machine Tool Lab II 3 Sem Hrs
Prerequisite: SKTR 181 or permission of department. Purpose of course is to expose apprentice to a variety of special machine shop operations/procedures not normally available in early stages of the apprentice's on-the-job training. (45) FW

SKTR 183 Machinery Handbook 3 Sem Hrs
Prerequisite: SKTR 182 and SKMA 103. This course is devoted to learning how to use and understand the Machinery Handbook. (45) F

SKWL 101 Fuel Gas Welding and Cutting 3 Sem Hrs
Topics include safety in use of equipment for oxy-fuel gas welding and cutting, and equipment set-up. Laboratory experience includes oxy-fuel welding of flat strips 1/8" or less in thickness, and cutting, beveling, and piercing plate and pipe. Credit may be earned in either SKWL 101 or WELD 103 but not both. (45)

SKWL 104 Introduction to Shielded Metal Arc Welding 3 Sem Hrs
Topics include safety indoctrination, safety in arc welding, welding terms and definitions, electrode selection, and welding joints. Laboratory includes striking an arc, running beads, pad welding, and fillet welds. Credit may be earned in either SKWL 104 or WELD 104 but not both. (45)

TEACHER ASSISTANT COURSES

TA 111 Introduction to Teacher Assistant 3 Sem Hrs
Provides an overview of the profession including: self-understanding, types of duties, professionalism, audio-visual equipment, functions of the media center. Requires a 30 hour observation/participation (practicum) component in a school setting to identify the role and responsibilities required of a teacher assistant. (30-30) O

TA 112 Instructional Materials and Strategies 3 Sem Hrs
Prerequisites: TA 111. Provides an overview of how children learn and individual learning styles. Explores teaching models, educational vocabulary, writing goals, objectives and outcomes. Identifies theories in their own activity plans with emphasis on evaluation of their own performance as an organizer and leader. Emphasizes instructional strategies. (45-0)

TA 160 Practicum in Teaching Assistant 3 Sem Hrs
Prerequisites: TA 111, TA 112 or permission of coordinator. Provides actual experiences with children in a school setting, including 45 clock hours with special needs children and 45 classroom clock hours which could include media center, lunchroom and playground activities. The student will assist and be evaluated by a certified classroom teacher. (15-90)

TA 290-299 Special Projects in Teacher Assistant O

WATER ENVIRONMENT TECHNOLOGY COURSES

WET 110 Water Treatment 3 Sem Hrs
A study of the processes used to produce and distribute a portable water supply for municipal and industrial use. Well fields, treatment techniques, and distribution systems are analyzed. (45-0) WE

WET 112 Wastewater Treatment 3 Sem Hrs
A study of the various methods used to treat municipal and industrial wastewaters. Physical, chemical and biological methods are stressed. Collection systems and ultimate disposal or water reuse is also included. (45-0) FE

WET 211 Water Chemistry I 4 Sem Hrs
Prerequisites: CHM 111 and MTH 111, or permission of instructor. A study of the gravimetric, volumetric, and colorimetric analyses utilized in the production of a potable water supply; the treatment of wastewaters; and investigations of environmental pollution. (30-75)

WET 212 Water Chemistry II 4 Sem Hrs
Prerequisites: WWT 211. Emphasizes instrumental methods utilized for identifying micro contaminants with special attention to gas chromatography and atomic absorption techniques. (45-30)

WET 220 Water Microbiology 4 Sem Hrs
Prerequisites: CHM 111 and MTH 111. Studies the microbiology of healthy water supplies, water and wastewater treatment facilities, and polluted bodies of water. Emphasizes microscopic examination and bacteriological testing techniques used in the production of a potable water supply and the biological treatment of wastewaters. (45-30)

WET 230 Water/Wastewater Utility Management 3 Sem Hrs
Prerequisites: WWT 110, WWT 112 and with concurrent enrollment in WWT 265. Involves a study of the methods and procedures used in managing a water utility and wastewater utility. Included are the laws governing water and wastewater treatment, the staffing of plants, the budget process and supervisory responsibilities. (45-15)

WET 240 Applied Hydraulics 3 Sem Hrs
Prerequisite: MTH 111. A study of the mechanics of fluids. Fluids at rest and flowing in pipe systems and open channels of water distribution and wastewater systems: sewage collection systems and treatment plants are investigated. Metering and pumping are included. (45-0) O

WET 244 Water/Wastewater Utility Equipment Maintenance 3 Sem Hrs
Prerequisite: WWT 110, WWT 112, WWT 240. Provides the student with basic knowledge of mechanical equipment and repair techniques used in both water and wastewater facilities. Shop drawings and blueprints are used during the disassembly and reassembly of a variety of mechanical devices. Pumps, valves, piping systems, and chlorination equipment are studied. (45-0)

WET 246 Water/Wastewater Utility Electrical Maintenance 2 Sem Hrs
Prerequisite: WWT 110, WWT 112. A study of basic electricity and the instrumentation utilized in water and wastewater treatment facilities. Emphasis is placed on the use of testing equipment to troubleshoot electrical and instrumental failures, maintenance problems, and to evaluate the performance of equipment. Energy conservation methods are also studied. (30-0)

WET 265 WWT Practicum 4 Sem Hrs
Prerequisites: WWT 212, WWT 244, and WWT 246 with previous or concurrent enrollment in WWT 230. Provides opportunities to perform technical procedures through structured field experience in water and wastewater treatment plants. Emphasizes gaining experience under plant managers and operating personnel with goal of developing organizational skills and responsibility necessary for entry-level employment. Uses rotation through assigned areas of experience in water treatment for 160 hours and continuous experience in wastewater treatment for 160 hours of in-plant services for total of 320 hours minimum required. (0-320 OJT)

WELDING COURSES

WELD 101 Fuel Gas Welding, Cutting, Brazing 1 Sem Hr
Addresses safety in the use of oxy-fuel equipment, procedures, and operations. Includes the proper applications of common techniques for the joining and severing of metals. (5-15)

WELD 103 Fuel Gas Welding and Cutting 3 Sem Hrs
Topics include safety in use of equipment for oxy-fuel gas welding and cutting, and equipment set-up. Laboratory experience includes oxy-fuel welding of flat strips 1/8" or less in thickness, and cutting, beveling, and piercing plate and pipe. Credit may be earned in either WELD 103 or SKWL 101 but not both. (45-0) WD

WELD 104 Introduction to Shielded Metal Arc Welding 3 Sem Hrs
Topics include safety indoctrination, safety in arc welding, welding terms and definitions, electrode selection, and welding joints. Laboratory includes striking an arc, running beads, pad welding, and fillet welds. Credit may be earned in either WELD 104 or SKWL 104 but not both. (45-0) FD

WELD 105 Mig Welding of Thin Gauge Steel 1 Sem Hr
Addresses proper set-up of the Mig equipment and proper adjustment of the welding parameters. Includes the proper application of common techniques for the joining of thin gauge steel. (5-15)

WELD 111 Welding Metallurgy 3 Sem Hrs
Covers temperature measurement by color, hardness, strengths, fatigue properties, steels, plastics, cast iron, copper, brass, bronze, aluminum, their applications with respect to wear, corrosion, and design. Credit may be earned in WELD 111 or SKMT 111 but not both. (45-0) FW

WELD 114 Shielded Metal Arc Structural and Tank 8 Sem Hrs
Prerequisite: WELD 104 or SKWL 104 with a C(2.0) average or better or permission of instructor. Teaches Shielded Metal Arc Welding (SMAW) safety, welding terms and definitions, welding electronics, and welding joints. Included in laboratory exercises are groove welds on plate in fixed positions. (30-90) FW

WELD 120 Beginning Industrial Blueprint Reading 2 Sem Hrs
Designed for machine operators, welders, or assemblers with little or no blueprint reading experience. Includes manipulation of basic fractions and decimals and as applied to the reading of blueprints, reading measuring instruments, basic geometric figures, drafting and blueprinting procedures, basic orthographic projection, auxiliary and sectional views, detail and assembly drawings, dimensioning and tolerances, title block, change block, list of materials and notes. Credit may be earned in WELD 120 or DRF 120 but not both. (30-0) FD

WELD 122 Blueprint Reading for Welders and Fabricators 2 Sem Hrs
Prerequisite: WELD 120 or DRF 120. Designed specifically for welders and fabricators working with welding drawings. A more in-depth treatment of basic blueprint information, orthographic projection, assembly drawings, and geometric tolerancing. Emphasis placed on welding symbols and welding drawings. Credit may be earned in WELD 122 or DRF 122 but not both. (30-0) WD

WELD 220 Weld Qualification-Plate 4 Sem Hrs
Prerequisites: WELD 114 and WELD 235 with a "C" (2.0) in each class or better or permission of instructor. Teaches welding safety, welding terms and definitions, welding electronics, and AWS welder performance testing procedures. Includes laboratory exercises e.g. in qualification tests groove welds on plate in fixed positions. (15-45)

WELD 224 Shielded Metal Arc Welding Pipe 8 Sem Hrs
Prerequisite: WELD 114 with a C(2.0) average or better or permission of instructor. Teaches Shielded Metal Arc Welding (SMAW) safety, nominal pipe size and thickness standards, and welding joints. Included in laboratory exercises are groove welds on pipe in fixed positions. (30-90) FW

WELD 226 Gas Tungsten Arc Welding**6 Sem Hrs**

Discusses general safety, Gas Tungsten Arc Welding (GTAW) safety, welding terms and definitions, filler metal, electrode and gaselection, nominal pipe size and thickness standards, and welding joints. Included in laboratory exercises are starting an arc, running beads, pad welding, and groove welds on plate and pipe in fixed positions. (30-60) FW

WELD 235 Gas Metal Arc Welding**6 Sem Hrs**

Discusses general safety, Gas Metal Arc Welding (GMAW) safety, welding terms and definitions, electrode and gas selection, nominal pipe size and thickness standards, and welding joints. Includes laboratory exercises in starting an arc, running beads, pad welding, and groove welds on plate and pipe in fixed positions. (30-60)

the Delta Difference



Jerry Seward

Why did I decide on Delta?

I decided on Delta because it was the most affordable choice for me during the time I was going back to school, and I wanted to be close to home.

What do I think is the Delta Difference?

The Delta Difference, again . . . being a community college, close to home, affordable, with small classes, and with instructors who are personable. You get to know people better.

Hometown
Saginaw

High School
Saginaw High

Major
Broadcasting

Favorite Food
Chocolate chip cookies

Favorite Music Group
Seal

Most Admired Figure
My brother

Last Book Read
The Lost World

Age
28

Hobbies
Reading, collecting cards and comics, and writing

Career Goals
To work in either broadcasting or journalism

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REGULATIONS

AND

REFERENCES

1. Students' Rights, Responsibilities, and Conduct
2. Safety and Security Information
3. Parking and Traffic Regulations
4. Health Issues
5. Records Access and Confidentiality
6. The Delta Directory
7. Definitions of College Terms
8. Index
9. Maps



Students' Rights, Responsibilities, and Conduct

In joining the academic community, students enjoy the right of freedom to learn and share the responsibility in exercising that freedom. Students are expected to conduct themselves in accordance with standards which are designed to perpetuate the educational purposes of the College.

The College has developed procedures and channels by which students may have a fair and objective hearing for their grievances in regard to academic evaluation, students' rights and privacy, and disciplinary action. Students have the right of protection against prejudice, capricious academic evaluation, or loss of personal rights and freedom. At the same time, however, students are responsible for maintaining standards of academic performance established for each course in which they are enrolled and for following the rules of conduct established by the College.

Association and Expression

A. Students are free to organize and join associations to promote their common interests. In order to use College facilities and resources and to request financial assistance from the College for programming, student groups are required to register with the Vice President of Student Services' Office, submitting a statement of purpose and a current list of officers or designated representatives. Groups are also encouraged to choose a faculty or staff advisor to assist them.

B. Students and student organizations are free to examine and discuss all questions of interest to them and to express opinions publicly and privately, including their views on issues of College policy.

C. Generally, students or student organizations may distribute written material without prior approval. Hand-to-hand distribution shall be permitted in areas of public passage (commons, hallways, sidewalks, etc.), providing distribution does not interfere with normal College activity or routine. Posting and other types of distribution shall be limited to those places established by written College regulations.

D. Students and student organizations are free to invite speakers, to hear any person, and to plan programs of their own choosing subject only to those written requirements established by the College to ensure proper scheduling and use of facilities.

E. No policy, procedure, or guideline of Delta College shall discriminate on the basis of the political, social, or other opinions of students individually or collectively.

F. No record will be kept by Delta College which reflects the lawful political activities or beliefs of students, unless requested by the student in writing. Information about a student's views, beliefs, and/or political associations acquired by the faculty or other College employees in the normal course of their work will be considered confidential and will not be disclosed without the knowledge and consent of the student unless under legal compulsion.

G. Nothing in this policy shall be construed to imply approval or endorsement by Delta College of the views expressed by students or student organizations.

H. Nothing in this policy shall be construed to relieve any person of obligations under Regulations and Rules of Conduct.

Regulations and Rules of Conduct

I. Introduction

A. General Responsibility: Delta College has the responsibility to adopt and enforce rules which are consistent with Delta College goals and operations and to establish due process procedures in disciplinary cases.

B. Authority to Establish Standards of Conduct: Standards of conduct are established by rules of the College, as adopted by the Board of Trustees, and made known through College publications or by notices distributed or prominently posted on College Bulletin Boards; and by laws of the United States, State of Michigan and County of Bay (public laws).

Except in the case of interim or emergency rules as granted by Michigan Public Act No. 26 of 1970, such regulations shall be established and amended with the advice of the College Senate. Final authority is through either the Delta College Board of Trustees or the laws of the United States, State of Michigan, or County of Bay.

C. Individual Responsibility: An individual having an institutional relationship to Delta College (members of College community) is automatically placed under the rules of the College. "Institutional relationship to the College" means any connection of employment, enrollment, or service existing between any person and Delta College. As used herein, this phraseology is intended to prevent the application of these rules to purely personal or social relationships between or among students, faculty members, administration, or staff members outside the College proper. It is therefore important for all members of the College community to familiarize themselves with the rules and regulations affecting them.

D. Effect of Violating Rules: A member of the College community violating any of the rules of the College or a public law, on-Campus or off-Campus, at a Delta College-sponsored activity, is subject to disciplinary action by Delta College that is appropriate to the nature of the offense. Such disciplinary action will be taken in accordance with the procedures governing cases of violations as outlined in the Delta College judicial process.

E. Reports of Violations: Reporting of violations shall be within the province of all members of the College community, because they have a common responsibility in maintaining an orderly and efficient community for their mutual benefit. Violations may fall in one of several categories: 1. Minor offenses which are dealt with by reprimand; 2. Violations by students which are to be reported to the Office of the Vice President of Student Services; 3. Violations by faculty or staff members which are to be reported to the Office of the President; and 4. Civil or criminal violations which are to be reported to the Campus Police Department.

F. Severance Provision: If any of the foregoing rules or any part of any such rule shall be adjudged invalid by a court of competent jurisdiction, then such adjudication shall not affect the validity of these rules as a whole or any provision or part of any such rules not so adjudged invalid.

II. Rules and Regulations

A. Physical Force: No member of the College community shall use physical force, threaten physical force, or use intimidation against any person engaged in an activity properly undertaken as part of an institutional relationship of the College except as permitted under normal law enforcement procedures.

B. Disruption: No member of the College community shall interfere with a College function by depriving any person of needed safety, quiet, or other physical conditions of work or study.

<p>C. Interference: No member of the College community shall interfere with the free movement of any person engaged in an activity properly undertaken as part of an institutional relationship to the College.</p>	<p>N. Drugs: No member of the College community shall possess, distribute, or use any prohibited drug in either the refined or crude form, nor shall any member of the College Community possess property which is used, or intended for use, as a container for any controlled substance except controlled substances for personal usage, which must be under the current prescription of a licensed physician, those specifically authorized to Delta College by federal or State authorizing agencies for educational purposes.</p>
<p>D. Compliance: In keeping with the system of voluntary compliance that underlies the College Regulations and Rules of Conduct, no member of the College community shall fail to follow the reasonable instructions given by an appropriate College official to cease specified conduct, if such conduct threatens disruption or interference with the rights of others, College discipline, College functions, and/or order in the College community.</p>	<p>O. Smoking Policy: In the interest of providing a safe and healthy environment, all Delta College buildings are smoke-free. This action is in accordance with the Michigan Clean Indoor Act, Pt. 126 of the Public Health Code P.A. 368 of 1978.</p>
<p>E. Identification: No member of the College community shall refuse to provide identification when requested to do so by an identified employee of the College.</p>	<p>P. Selling, Soliciting, and Distributing: Any person who wishes to distribute, solicit, or sell information, materials, goods, or services not within the normal College activities and routine, must have the written permission of the Vice President of Student Services or the Vice President of Business and Finance or their designee.</p>
<p>F. Forbidden Occupation: No member of the College community shall, subsequent to reasonable notice to leave given by the College President or the authorized designee, continue occupation of any College facility or property which is under the direct control or responsibility of the College, especially if such occupation interferes with a College function or risks injury to a person or property.</p>	<p>Q. Animals: People may not bring animals on Campus or into College buildings. Leader dogs and animals used for educational purposes are exceptions; however, all animals must remain under the control of their owners and be properly licensed and medically treated as required by law.</p>
<p>G. Facility Entry and Usage: No member of the College community shall gain or attempt to gain unauthorized entry to or make unauthorized use of the College facilities or property.</p>	<p>R. Federal, State, and Local Laws: Violations of Federal, State, or local laws on-Campus, or off-Campus in connection with College-sponsored activities shall constitute violations of College rules.</p>
<p>H. Property: No member of the College community shall damage, deface, destroy, steal, or misappropriate the property of the College, any member of the College community, or any visitor to the College Campus.</p>	<p>S. Plagiarism and Honesty in Academic Work: See Section IV, Academic Policies and Information.</p>
<p>I. Unauthorized use of College Credit, Property, Etc.: No unauthorized member of the College community shall use the College telephones, postal machines and meters, duplicating machines, computer, motor vehicles, or other equipment where the unauthorized use of such results in the incurring of charges by the College. This provision shall be deemed to also include College billing, charging, and credit card numbers utilized for communications or transportation purposes. Further it shall be a violation for any member of the College community who has not been issued a key by the College to possess or use College keys for any purpose whatsoever.</p>	<p>Questions regarding the rights and responsibilities of Delta College students and guests should be addressed to the Office of the Vice President of Student Services, phone 686-9339.</p>
<p>J. Counterfeiting, Altering, and Copying: No member of the College community, with intent to injure or defraud, shall falsely make, forge, manufacture, print, reproduce, copy, tamper with, or alter any writing, document, record, or identification used or maintained by the College or by members of the College community.</p> <p>No member of the College community shall knowingly possess, display, or cause or permit to be displayed any writing, record, document, or identification form used or maintained by the College or by members of the College community, knowing the same to be fictitious, altered, forged, counterfeited, or made without authority.</p>	<p>Bulletin Board Posting Policy</p> <p>Students wishing to post advertisements (i.e. sales items, spring break trip posters, lost and found, etc.) are requested to take the advertisements to the Students Activities Office D-102 West Concourse for approval. All advertisements will be posted for a maximum of thirty days (30) and will be removed the last working day of every month. Advertisements are limited to twenty-five (25) pieces of material and must be distributed accordingly throughout the designated posting areas. Metal strips in the East and West Halls (Main Building) are reserved specifically for Delta College related materials.</p> <p>Areas of Posting:</p> <p>Advertisements may be posted in six (6) different locations.</p> <ul style="list-style-type: none"> • The bulletin boards in the South entrance to Delta College • The bulletin boards in the East and West Halls (Main Building) • The bulletin board in the Fine Arts Building (S Wing) • The bulletin board in the Allied Health Building (F Wing) • The bulletin board in Student Lounge Area (West Commons Entrance) <p>Student advertisements posted in any location other than the ones listed above <u>will be removed</u>.</p> <p>Exceptions: The exceptions to the above will occur during the two weeks preceding a Student Senate election when candidates for Student Senator will be allowed to post election material throughout the College. Materials must be removed the day following the election. Other exceptions will be at the discretion and approval of the Vice President of Student Services.</p> <p>Posting on glass doors or windows is prohibited. Free standing signs are available from General Services for hallway usage.</p>
<p>K. Confidentiality of College Records: No person shall inspect, investigate, or use College files (i.e., counseling, financial aid, placement, records, registration) without proper College authorization.</p>	
<p>L. Firearms and other Dangerous Materials: The possession or use of firearms, firecrackers, explosives, toxic or dangerous chemicals, or other lethal weapons, equipment, or material is not permitted on College property (including College housing) at any time except when specifically authorized by the College for educational purposes or when firearms used for recreational purposes and transported through the Campus meet the regulations of the Campus Police Department.</p>	
<p>M. Alcoholic Beverages: No member of the College community shall possess or consume beer, wine, or other alcoholic beverages on College property, or any property which is under the direct control or responsibility of the College, excluding Residence Halls, in which case regulation of such shall be the responsibility of the Vice President for Student Services. This regulation shall not apply to the President's home and the Higgins Lake Cottage. This rule may be suspended from time to time by authorization of the President.</p>	

Disruptive Students

Disruptive conduct taints the educational atmosphere and may endanger the safety of students and staff. Accordingly, when student conduct on campus creates a serious enough disruption such that the only reasonable solution is removal of the student, a faculty/staff member may temporarily suspend or permanently expel that student from class/campus.

This policy and accompanying procedures assumes that the faculty/staff has made every attempt to resolve this issue with the student through such informal methods as individual conferences and/or written messages. If these informal methods have not met with success, the following formal procedures will be implemented.

1. The student will be verbally warned by the faculty or staff member the student's behavior is considered to be disruptive (describe the behavior to which the faculty/staff member is referring) and that if the student continues the behavior, s/he will be asked to leave the class/building.
2. If the student persists with the disruptive behavior, the faculty/staff member can then ask the student to leave the class or campus. At this time the faculty/staff must warn the student that failure to leave may result in police intervention. The faculty/staff must indicate whether the suspension is just for that day or if the student must appeal to the appropriate Division Chair to reenter the class. In other words, clarify for the student whether the suspension is temporary or permanent.
3. If after the previous verbal warnings the student continues to demonstrate disruptive behavior, the faculty/staff will summon the appropriate police agency who will have the option of arresting the student for criminal trespass, if necessary. The faculty/staff member's request for the student to leave provides the police agency with sufficient probable cause to effect an arrest.

4. If as a result of faculty/staff member's request for expulsion the student leaves the classroom/campus, the faculty/staff will notify their Division Chair or immediate supervisor in writing within 24 hours of the incident. The written report must include the student's identity and the behavior that was considered to be disruptive. Sufficient detail must be provided to allow the Chair/Supervisor to assess whether or not the policy was followed. Please note that the written report is only necessary when considering expulsion. Temporary suspension is handled informally by the faculty/staff member.

5. The Division Chair/Supervisor must immediately contact the student by phone, with a follow-up through registered mail, notifying them of the opportunity to explain the incident from the student's point of view. In addition, this notice will include the date by which the student must respond back to the Division Chair (or designee) or else forfeit their right to appeal the expulsion. Generally, the student will be given three class* days to respond in person, by phone, or mail (post-marked). Within 24 hours of the conclusion of the meeting to review the suspension, the Chair/Supervisor will decide if the removal was justified or if the student should be reinstated. The Chair/Supervisor may find it necessary to consult with other College employees, students, or records for additional information upon which to base their decision. The Chair/Supervisor may support or deny the removal, or make other arrangements for the student.
6. The decision of the Chair/Supervisor will be conveyed to the student and the faculty/staff member who caused the removal as soon as possible, either in person or by phone. A written confirmation of the decision will be sent to both the staff member and the student within three class days. Within three class days of the receipt of the written decision, the student or the staff member may appeal in person, by phone, or in writing the decision to the appropriate Dean/Supervisor (identified in the written decision by the Chair); whose decision will be final.
7. It is important to emphasize that each step of the process should proceed as quickly as possible, while maintaining fairness and objectivity.

*For the purpose of this policy, class days include only Monday-Friday when Delta College classes are in session.



Student Complaint and Hearing Process

Every effort will be made to first resolve conflicts through informal discussions with the involved parties. If this fails, a written complaint may be filed as follows:

A. Complaint

1. A complaint alleging violations of a College rule and/or regulation may be filed in writing against any student through the Campus Police Department on a State of Michigan Standard Incident Report Form, UD-107. Complaints must be filed within a reasonable length of time. This report shall then be forwarded to the Office of the Vice President of Student and Educational Services (or designee) for action.
2. After consultation with the student involved and after undertaking other investigations that may be appropriate under the circumstances, the Vice President of Student and Educational Services or designee shall take one of the following actions:
 - a. Dismiss the complaint.
 - b. Conduct an informal hearing and invoke a sanction if the alleged violation is admitted.
 - c. Refer to a Case Review Officer selected from a list prepared by September 1 each year by the Office of the President and named within three working days of the receipt of the complaint, barring unforeseen circumstances.
3. The action taken by the Office of the Vice President of Student and Educational Services (or designee) will be communicated to the student in writing.

B. Case Review

Purpose: To consider complaints referred by the Office of the Vice President of Student and Educational Services (or designee) and to recommend appropriate action to be taken by the Office of the Vice President of Student Services.

1. The Case Review Officer will conduct a case review, normally including discussion with all parties involved, prepare a written report, and recommend that one of the following actions be taken by the Office of the Vice President of Student and Educational Services:
 - a. Dismiss the complaint.
 - b. Invoke a specific sanction.
 - c. Activate the Formal Hearing Panel.
2. The Case Review Officer will make a recommendation within five working days of receiving the complaint, barring extenuating circumstances.
3. Action by the Office of the Vice President of Student and Educational Services shall be communicated to students in writing.

C. Formal Hearing Panel

1. Members of the Formal Hearing Panel shall serve for one year (September 1 through August 31 of the following year) and include:
 - a. A non-voting chair designated by the Office of the Vice President of Student and Educational Services who has not previously ruled on the case.
 - b. Three students selected by the Student Senate Committee.
 - c. One faculty selected by the Faculty Executive Committee.
 - d. One staff member selected by the Senate President.
 - e. A sufficient number of alternates shall be designated to assure full panel representation when a hearing is scheduled.
2. The Formal Hearing may be requested:
 - a. By the student filing a written request with the Office of the Vice President of Student and Educational Services within five working days following notification of the action taken or
 - b. By the Office of the Vice President of Student and Educational Services.
3. Within 10 working days of the receipt of a written request for a formal hearing, the Office of the Vice President of Student and Educational Services shall convene the Hearing Panel.

4. The Formal Hearing Panel will review all previous actions and conduct a formal hearing. Within 8 working days, barring extenuating circumstances, the Panel shall make a ruling specifying its findings.

Such ruling may result in:

- a. Confirmation of the action of the Office of the Vice President of Student and Educational Services.
- b. Dismissal of all or a portion of the complaint.
- c. Instructions to the Office of the Vice President of Student and Educational Services to invoke a specific sanction or initiate other disposition as the Hearing Panel deems appropriate under the circumstances.

5. The decision of the Hearing Panel shall be final except that action involving suspension or dismissal from the College must be ratified by the Office of the President before implementation.

Student Computer Accounts

Delta College students currently enrolled in academic or community service classes are eligible to request a student computer account providing access to the Internet.

Delta College student accounts will be terminated after a 12 month grace period during which the student has not been enrolled in a Delta College class.

Any student computer account in violation of Delta College Internet or other computer use policies will be terminated.

Code of Responsible Computer Usage

Delta College encourages students, faculty, and staff to utilize institutional computing facilities for legitimate educational purposes. The following code of conduct for computer usage should be followed at all times.

1. Each account owner and workstation user is solely responsible for the usage incurred through her/his account/workstation. Computer access is granted to an individual and may not be transferred to, or shared with, another person without authorization from the Executive Director of the Office of Information Technology (OIT).
2. All users must respect the privacy and usage privileges of others.
3. All users must respect the integrity of computing systems and networks both on campus and through external connections. Users shall not attempt to infiltrate or alter the hardware or software components of a computing system or network.
4. All users of Delta's external network connections shall comply with the "Acceptable Use" policies established by the external networks' governing bodies. In cases of doubt, users bear the burden of responsibility to inquire concerning the permissibility of external network uses prior to execution. Such questions should be directed to the Executive Director of the Office of Information Technology.
5. All users must respect the legal protection provided by copyright and license to programs and data. Users are responsible to comply with the license and copyright provisions of the software they use.
6. Each user shall observe the classroom or computer lab policies and procedures. Users are expected to comply with the instructions of support staff in the computer labs and Office of Information Technology staff. In particular, users will vacate workstations or the facility and will surrender other resources (such as printers and software) promptly when asked to do so both at closing times and when necessary to permit access by others.
7. Violations of the above may lead to any of the following:
 - a. Termination of a program or online sessions
 - b. Reduction of allocations or restrictions of account privileges
 - c. Invalidation of an account I.D.
 - d. Disciplinary action by the appropriate faculty member, administrator, dean, supervisor, or manager

Safety and Security Information

Law Enforcement on the Campus

The Delta College Campus Police Department is primarily responsible for providing safety and security services, enforcing traffic and parking regulations, and conducting criminal and accident investigations. The Department is located in the Main Building, N-102, across from the East Main Entrance. The Campus Police Department is open 24 hours a day, 7 days a week excluding holidays, at which time officers of the Department are dispatched through Bay County Central Dispatch, for emergencies **only**.

The police officers of the Campus Police Department are deputized through the Bay County Sheriff Department and as such, have full police and arrest powers on Campus. These police officers are trained in the same manner as all other law enforcement officers in the State of Michigan and are certified as such through the Michigan Law Enforcement Officers Training Council. The officers also receive training in basic first aid and personal safety. The Campus Police Department maintains a close working relationship with federal, State, county, and other local law enforcement agencies and appropriate elements of the criminal justice system.

Reporting of Criminal Activities or Emergencies

To report a crime or an emergency, you should call the Delta College Campus Police Department at 686-9111 or for inter-College calls, dial Ext. 9111. A crime or emergency which occurs off-Campus should be reported to the police department having legal jurisdiction for that area. If you are unsure which department has jurisdiction, call 686-9112.

The Campus Police Department maintains two-way radio contact with Bay County Central Dispatch, providing access to assistance and support from the Bay County Sheriff Department, the Michigan State Police, Saginaw Valley State University Police Department, the Frankenlust Township Fire Department, Bay Medical Ambulance, and the Delta College Physical Plant Department.

Maintenance and Security of Campus Facilities

Delta College maintains a very strong commitment to Campus safety and security. Every effort is made to ensure that the Campus facilities, buildings, and grounds are maintained in such a manner as to promote safety and reduce criminal opportunity.

Exterior lighting is a very important part of this commitment. The College attempts to maintain adequate exterior lighting in parking lots as well as on the pedestrian walkways. Members of the College community are encouraged to report any exterior lighting deficiencies to the Campus Police Department or the Physical Plant Department. Written surveys of exterior lighting are taken by the officers of the Campus Police Department or by Physical Plant employees on a monthly basis.

Exterior doors on Campus buildings are locked and secured each evening by Campus Police personnel. Physical Plant personnel are responsible for the unlocking and opening of these exterior doors. Door and security hardware operating problems are also reported by these personnel on a daily basis. Problems in exterior door locking mechanisms should also be reported to the Campus Police or Physical Plant Departments.

Parking lots on Campus are actively patrolled by Campus Police officers and the Department also has a variety of alarms (including fire, intrusion, hold-up and trouble) to assist the officers in patrolling and monitoring the Campus.

Security Awareness and Crime Prevention Programs

It is the intent and desire of Delta College to prevent crimes rather than react to them after the fact. Delta College's crime prevention program is based upon the dual concepts of eliminating or minimizing criminal opportunities, wherever and whenever possible, and encouraging students and employees to be responsible for their own safety and security, as well as that of others. This program is accomplished in the following manner:

1. New Student Orientation: A crime prevention presentation accompanied by a brochure handout is made available to new students at Orientation.
2. New Employee Orientation: A crime prevention presentation accompanied by a brochure is made available to new employees being oriented to Delta College during each Fall Semester.
3. Crime Awareness/Prevention Presentations: Crime prevention presentations are made annually to various Campus groups.
4. Closed-Circuit Television Surveillance: Closed-circuit television cameras monitored by the Campus Police survey several restricted areas.
5. Escort Service: An escort service is available for the safety of students and employees (there may be times, however, when an officer is not immediately available for this service). Students, faculty, and staff are encouraged, for their own safety, to walk in groups and not to accept escorts from strangers.
6. Printed Crime Prevention Materials: Crime prevention brochures and posters related to crime awareness/prevention measures are distributed and displayed.
7. Security and Facilities Surveys: Surveys of exterior lighting, exterior doors, and grounds are conducted by the Campus Police Department/Physical Plant Department to promote and enhance safety and security.
8. Operation Identification: The engraving of social security numbers or owner-recognized numbers on items of value is strongly promoted and available at no cost to students, faculty, and staff.
9. Crime Prevention Publicity: Prevention articles and material are routinely published in the student newspaper, in the weekly bulletin and in the faculty/staff newsletter. This material is also on display in the showcase located in the hallway outside the Campus Police Department.
10. Campus Update: A monthly listing of on-Campus criminal activities and statistics is displayed in the Department showcase.
11. Special Alerts: If circumstances warrant, special printed crime alerts can be prepared and distributed either selectively or throughout the Campus. Because no campus is isolated from crime, the key to preventing crime is awareness, which is best achieved through education.
12. Patrols: Officers of the Delta College Police Department perform routine patrols of the campus both on foot and in the car. In addition, a bicycle patrol allows for a more personal and individualized contact with officers of the department.
13. Sexual Offense Awareness/Prevention Programs: Sexual Assault Awareness/Prevention Programs are made available throughout the year to members of the college community, which may include training sessions, brochures, posters/flyers, bulletin boards, and information in the news media, along with material covering this subject during the Orientation program.

Allegations of Criminal Sexual Conduct committed by members of the College community, will be handled through the College's Judicial Process Article. Such persons may also be subject to criminal prosecution or other legal action in the court system.

In addition to imposition of disciplinary sanctions under College procedures, (which could include suspension or expulsion from the College and/or termination from employment) prosecution under state and federal laws, (which could include fines and/or imprisonment) is also possible.

REMEMBER: Don't shower, bathe, douche, change clothes or straighten up the area where assault occurred. You will destroy evidence you may need! Report it to the police! You will have the option of being assisted by campus authorities in notifying law enforcement authorities if a sex offense has occurred.

In investigating and hearing cases of alleged sexual assault:

- 1) The accuser and the accused shall be entitled to the same opportunities to have others present during a disciplinary proceeding; and
- 2) Both the accuser and the accused shall be informed of the outcome of any College disciplinary proceedings.

Victims of sexual offenses are encouraged to receive confidential assistance, on-campus, from Health Services (Room N-102), at 686-9333, or the Counseling Center (Room D-102) at 686-9330. For off-campus assistance contact your local Crisis Intervention Center.

Victims have the right to choose counseling, medical treatment, prosecution and the reporting of their case, through the Delta College Judicial system and/or the off-campus court system, as well as the right to refuse all of the above without reproach from any College personnel.

This information is being provided to you as part of Delta College's commitment to your safety and security on its Campus and in compliance with the Crime Awareness and Campus Security Act of 1990.

Crime Statistics

Delta College believes that an informed public is a safety-conscious public. The following statistics, provided in compliance with the Crime Awareness and Campus Security Act of 1990, are for your information. A written request for crime statistics involving major off-Campus sites has been made to the police agencies having jurisdiction over each off-Campus site. Any crime statistics for these sites, which have been included in these statistics, reflect only those offenses which have been brought to our attention.

These offenses do **not** include "assists" to outside law enforcement agencies.

REPORTS:	1995	1996	1997
Murder	0	0	0
Criminal Sexual Conduct	0	0	0
Criminal Sexual Contact	0	0	0
Robbery	0	0	0
Aggravated Assault	0	0	0
Breaking & Entering	2	2	0
Auto Theft	0	0	1

The following are arrest statistics for three offense categories for 1997 and the preceding two years. These statistics do **not** include arrests taken through the College's judicial process.

ARRESTS:	1995	1996	1997
Liquor	5	3	1
Drugs	3	1	0
Weapons	1	0	0

Total Student Enrollment for 1997 = 9,806

Total Faculty/Staff for 1997 = 625

Sexual Harassment

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other conduct or communication of a sexual nature when:

- Submission to such conduct or communication is made a term or condition, either explicitly or implicitly, of a student's employment or education.
- Submission or rejection of such conduct is used as a basis for employment or academic decisions.
- Such conduct substantially interferes with a student's employment or education, or creates a hostile, offensive employment or educational environment.

Basically, sexual harassment is when someone makes you think you'll get in trouble, lose your job, get a bad grade, or be denied a service unless you give in to sexual advances or put up with sexual remarks or actions.

What Can I Do About Sexual Harassment?

First, be sure that the harasser knows you do not welcome this conduct or communication. State your objections clearly when it first begins! Don't just hope the problem will go away.

If the harassment continues, don't keep it to yourself. Take your complaint to either the Affirmative Action Officer, who is located in A-2, or to the Vice President of Student and Educational Services in A-119. Informal complaints are handled confidentially and may be resolved quickly. Talk to other students or coworkers and see if they observe what is happening to you. Ask if they have had similar problems with your harasser. Keep notes on when your problem occurred and what you said or did. This information will assist the College in handling your complaint.

Access to Campus Facilities

Campus buildings and facilities are accessible to students, faculty, staff, guests, and visitors during normal hours of business Mondays through Fridays, and for limited designated hours on Saturdays and Sundays (this excludes most holidays). The exterior doors to the Campus buildings are generally open and allow access between 7 a.m. and 10 p.m.



Parking and Traffic Regulations

Parking Regulations

All individuals using a motor vehicle on Delta College property are expected to comply with College and/or State rules, regulations, and laws pertaining to parking, traffic, and vehicle use on College property. Violations of College parking rules and regulations will result in a parking ticket which will result in fines and penalties ranging from \$10 to having the vehicle towed away at the owner's expense. Operators in violation of State law provisions applicable to the Campus will be issued a traffic citation complaint, which will require the violator to appear in 74th District Court in Bay City.

Sec. 1 - Parking

The College has provided adequate parking space for all students, faculty, staff, and visitors. All vehicles which enter the property of Delta College are expected to comply with the College regulations pertaining to parking and traffic. Failure to comply with these regulations will result in Violation Notices being issued by an officer of the Campus Police Department.

Sec. 2 - Towing

The College maintains its right to tow any vehicle illegally parked on the Campus without warning at the expense of the owner.

Sec. 3 - Obstructing Traffic

Any vehicle parked on the Campus in such a manner as to obstruct the free flow of traffic or endanger the safety of the public shall be in violation of this regulation. Vehicle will be towed at owner's expense.

Sec. 4 - Abandoned Vehicle

Any motor vehicle left on the Campus for more than five consecutive days without being moved, and the owner/driver has not notified the Campus Police Department that the vehicle will not be moved, shall be deemed abandoned. Any vehicle parked on the Campus without current license plates attached shall also be deemed abandoned. Vehicles will be towed at owner's expense.

In an effort to control long term parking, the College requires the owner/driver of any vehicle which will be left parked for an extended period of time (more than five consecutive days without being moved) to report the necessary information to the Campus Police Department immediately.

Sec. 5 - Parking on Delta College Property

No person shall park, except when necessary to avoid conflict with other traffic or in compliance with law or directions of a police officer or traffic control device, in any of the following places:

- 5.01: At any place or location where official signs prohibit parking or stopping, including but not limited to posted Fire and Emergency Lanes, Bus Stop Zones, and Loading and Unloading Zones.
- 5.02: At any place or location where official signs designate such parking for specific use of handicapped persons, motor-driven cycles, or bicycles.
- 5.03: On any sidewalk located on the Delta College Campus.
- 5.04: Within 15 feet of any fire hydrant.
- 5.05: Upon the curb, grass, land islands, traffic islands, or median strips.
- 5.06: In reserved parking lots without proper authorization.
- 5.07: On the highway side of any vehicle stopped or parked at the edge or curb of a street.
- 5.08: Within any intersection, or blocking any public or private driveway.
- 5.09: On any street or roadway, or the shoulder of any street or roadway on the Delta College Campus.
- 5.10: In such manner as to prevent other vehicles from using legitimate parking spaces; i.e., straddling parking lanes, parked in two spaces, parked parallel to curb, or backed into parking space.

Sec. 6 - Car Pool Parking

In an effort to assist students, a special Car Pooling Area, located in the East Parking Lot, has been established. Permits for car pooling are obtained from the Campus Police Department. To obtain a permit, there must be three or more riders in a car at least three days a week. Parking in this special area is strictly enforced every day. A violation will result in a ticket; a second violation will result in the vehicle being towed at the owner's expense.

Sec. 7 - Fines and Penalties

All fines will double if not paid or an appeal is not filed with the Campus Police Department within 21 days after receipt of a ticket. Once a ticket is put on hold after the 21-day period, a service charge of \$2 will then be added. Also, after the 21-day period, all transcripts are placed on hold and will not be released until the fine is paid. Any outstanding parking fines that are not paid by the end of the semester will also result in the student not being able to register for the next semester.

Sec. 8 - Appeals

All requests for appeal of parking tickets should be directed to the Campus Police Department. An appeal form must be completed and returned to the Department. The Parking Appeal Board will meet at regular intervals to review appeals and complaints. The Board may either uphold the fine, dismiss the case, order the release of holds placed on transcripts, or allow registration for classes in accordance with these regulations. The Board shall also send written notices to individuals with fines outstanding, advising them of the penalties. The Board will also review and recommend changes in these regulations. The College reserves the right to make any necessary revisions to these regulations at any time, providing a two-week notice is published in the student and staff bulletins prior to becoming effective.

Sec. 9 - Handicapped Parking

The Campus has limited spaces reserved for handicapped drivers. Spaces are assigned on a semester basis. Persons may apply at Disability Concerns (D-102). A doctor's letter describing the severity of handicap is required.

Traffic Regulations

Report all accidents to the Campus Police Department, whether they occur in the parking lots or on the roadways. A state accident form will be filled out as required. Most accidents occur in the parking lots while attempting to park your car or upon backing out of a parking space. Use care in parking and obeying traffic rules and regulations.

Note: Copies of accident reports will be furnished to insurance companies upon written request and payment of the required fee.

Sec. 1 - College Regulation

As a condition of the use of College roads and parking facilities, all vehicles on Delta College property shall be operated in a safe and courteous manner in obedience of all applicable State laws, all posted traffic signs, and directions of Campus Police officers.

All persons operating a vehicle on this Campus must show proper operator's license, registration, and proof of insurance when requested by Campus Police officers or other law enforcement officers.

Sec. 2 - State Law

Delta College Campus Police officers, as deputy sheriffs of Bay County, as well as other State law enforcement officials, have authority to enforce those provisions of State law applicable to the Campus. Operators in violation of such provisions can be issued a traffic citation, which will require the violator to appear in 74th District Court in Bay City.

Applicable provisions include:

OFFENSE

	MI State Law
Failure to stop after PL accident	257.617
Failure to stop after PD accident	257.618
Driving under influence of liquor or drugs	257.625
Driving while impaired	257.625a
Careless driving	257.626b
Drag racing	257.626a
Failure to stop leaving private drive	257.652
Manslaughter	750.324
Negligent homicide	750.325
Reckless driving	257.626

Conviction of certain of these offenses may result in points being added to your driving record.

Sec. 3 - Penalties

Members of the Delta College community who are in violation of the above Sections 1 and 2, whether or not issued a citation under State law, shall also be subject to disciplinary action under the College judicial process.

Health Issues

Drug & Alcohol Guidelines and Resources

The following information is provided in compliance with the Drug Free School and Communities Act Amendments of 1989 Public Law 101-226.

Alcoholic Beverages: No member of the College community will possess or consume beer, wine, or other alcoholic beverages on College property, or any property which is under the direct control or responsibility of the College, unless a specific College-approved function permitting alcohol consumption has been authorized by the Office of the President.

Drugs: No member of the College community will manufacture, possess, distribute or use any prohibited drug in either the refined or crude form, nor will any member of the College community possess property which is used or intended for use as a container for any controlled substance except controlled substances for personal usage, and these must be under the current prescription of a licensed physician, or those specifically authorized to Delta College by federal or State authorizing agencies for educational purposes.

Violations may fall into one of several categories: 1. Minor offenses which are dealt with by reprimand; 2. Violations by students which are to be reported to the Office of the Vice President of Student and Educational Services; 3. Violations by faculty or staff members which are to be reported to the Office of the President; and 4. Civil or criminal violations which are to be reported to the Campus Police Department.

Severance Provisions: If any of the foregoing rules or any part of any such rule will be adjudged invalid by a court of competent jurisdiction, then such adjudication will not affect the validity of these rules as a whole or any provision or part of any such rules not so adjudged invalid.

Effect of Violating Rules: A member of the College community violating any of the rules of the College or a public law, on-Campus or off-Campus, at a Delta College-sponsored activity, is subject to disciplinary action by Delta college that is appropriate to the nature of the offense. Such disciplinary action will be taken in accordance with the procedures governing cases of violations as outlined in the Delta College judicial process.

Reports of Violations: Reporting of violations will be within the province of all members of the College community, because they have a common responsibility in maintaining an orderly and efficient community for their mutual benefit.

Health Risks

Abusing drugs or alcohol can: make you sick; lower your job performance; put you in prison; cause dependency; be expensive; **kill you!**

Alcohol use will: dull your senses; impair coordination; slur your speech; cause mood changes; depress brain functions; damage liver, heart, and pancreas; irritate your stomach; cause physical damage to your unborn baby; lead to irreversible brain damage.

Drug use will: increase your heart rate and blood pressure; cause tremors and convulsions; produce heart, liver, and kidney damage; injure your unborn baby; lower your resistance to disease-AIDS; cause personality changes, confusion, depression; lead to paranoia and hallucinations; **kill you!**

Contact any of the following free Campus resources. All inquiries and assistance are confidential.

Counseling Center (D-102) 686-9330
Professional counselors available to assist during a crisis or by appointment.

Health Services (N-102) 686-9333
Medical care, referrals, brochures.

Human Resources Office (J-101) 686-9107
LIFE (Lifeline Information for Employees) program offering a confidential counseling and referral system for employees.

Community Resources include:

SAGINAW

Pathways, Saginaw Community Hospital	790-2272
Insight Recovery Center	792-0150
DOT Caring Center	790-3366

MIDLAND

Focus Center	631-7992
Alcohol Services of Midland County	1-800-395-3400

BAY CITY

Bay Haven	1-800-526-7314
Samaritan Center	839-0990

Alcoholic Anonymous 24-Hour Help Line 1-800-234-1253

Transmissible Diseases

- Delta College will provide for students, faculty, staff, and local residents, educational information concerning Acquired Immunodeficiency Syndrome (AIDS). Information about symptoms, known means of transmission, and precautions for avoiding or reducing the risks is given on a periodic basis.
- In response to AIDS inquiries which concern students or employees, no specific or detailed information concerning complaints or diagnosis will be provided to faculty, administrators, or parents without the expressed written permission of the individual in each case. It should be noted, however, that every possible effort will be made to address inquiries by explaining the extent of the College's educational programming and health safeguards concerning AIDS.
- Acquired Immunodeficiency Syndrome has been included as part of Section 504 of the Rehabilitation Act (1973) which states that no individual shall be discriminated against solely by reason of his or her handicap.
- The Infection Control Committee is helping Delta comply with the OSHA regulations for bloodborne pathogens.

Factors to be considered include:

The College Director of Health Services and the Director of the County Health Department, along with any other persons needing to be involved, will determine if a student has a transmissible disease, and if so:

- The possible consequences to fellow students and other members of the College community.
 - The risks to the infected student's personal health from remaining in the Campus environment.
- The Director of Health Services will notify the appropriate County Health Department of all cases of Hepatitis B, positive HIV, and other diseases required to be reported under State or federal law.

- The Director of Health Services will establish procedures to reduce the frequency of needlesticks and exposure to human blood, blood products, or mucous secretions in order to reduce the risk of transmission of infectious agents.
 - All clinic instruments which contact a person's blood or mucous membranes must be appropriately cleansed, disinfected, or sterilized between uses and, if disposable, placed in a labeled container designed for such a purpose.
 - All needlesticks must be immediately reported to the proper supervisor for further evaluation.
 - Students receiving accidental needlesticks in the classroom should report the incident immediately to their instructors. Faculty and staff receiving accidental needlesticks in the performance of their work should report the incidents immediately to their supervisors.
 - All Health Services staff shall be educated with respect to the transmissibility of infectious diseases such as Hepatitis B and HIV.
 - Health Services shall use disposable needles and lancets which will be properly disposed of immediately after use.
- Health Services will make information available concerning where testing for Hepatitis B virus, HIV antibodies, and other transmissible diseases can be received.
- Health Counseling will be made available either with the College Department of Health Services or the County Health Department.
- Health Services will observe strict confidentiality of all medical records so that no specific or detailed information concerning complaints or diagnosis be provided to faculty, administrators, or parents, without the expressed written permission of the patient. That position is supported by the amendment to the Family Education Rights and Privacy Act of 1974.
- This statement will be periodically reviewed in light of the most recent medical knowledge concerning specific diseases to which it is applicable.

Records Access and Confidentiality

Access to and Confidentiality of Student Records

Each year the College informs students of the Family Educational Rights and Privacy Act of 1974 as amended. This Act is to protect the privacy of educational records, to establish the right of students to inspect and review their educational records, and to provide guidelines for the correction of inaccurate or misleading data through informal or formal hearings.

No one outside the institution shall have access to nor will the institution disclose any information, **other than Directory Information**, from students' educational records without the written consent of students except to qualified personnel within the institution, to officials of other institutions in which students seek to enroll, to persons or organizations providing student financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Delta College community, only those members, individually or collectively, acting in the educational interests of students are allowed access to student educational records. These members include personnel in the Offices of Records and Registration, Admissions, Financial Aid, and Counseling, and academic personnel within the limitations of their need to know.

At its discretion the institution may provide **Directory Information** in accordance with the provisions of the Act to include: student name, verification of address, enrollment status, dates of attendance, degrees/certificates and awards conferred including dates, curriculum, participation in officially recognized activities and sports, and weight and height of members of athletic teams. Upon the publication of this notice, you are advised of the information which the College may release. Students may withhold Directory Information by notifying the Director of Records and Registration in writing. Request for non-disclosure will be honored by Delta College for only one academic semester at a time; therefore, requests to withhold Directory Information must be filed with the Director of Records and Registration one week prior to each semester.

The law provides students with the right to inspect and review all information contained in their educational records, to challenge the contents of their educational records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they find the decisions of the hearing panels unacceptable.

Delta College will permit persons who are or have been in attendance at the College to inspect and review their educational records. Students wishing to review their educational records must make written requests to the appropriate department listing the item or items of interest. Only records covered by the Act will be made available within 15 working days of the receipt date of the request.

Students may not inspect and review the following as outlined by the Act: financial information submitted by their parents; confidential letters and recommendations associated with admissions, employment, job placement, or honors to which they have waived their rights of inspection and review; or educational records containing information about more than one student, in which case the institution will permit access only to the part of the record which pertains to the inquiring student. The institution is not required to permit students to inspect and review confidential letters and recommendations placed in their files prior to January 1, 1975, provided these letters were collected under established policies of confidentiality and were used only for the purpose for which they were collected.

Students who believe that their educational records contain information that is inaccurate or misleading or is otherwise in violation of their privacy or other rights, may discuss their problems informally with the persons in charge of the records involved. If these persons agree with the students, the appropriate records will be amended. If not, the students will be notified within a reasonable period of time that the records will not be amended and will also be informed of their right to a formal hearing by the Vice President of Student and Educational Services.

An Employer's Opinion

"Frankenmuth Bavarian Inn Restaurant loves to employ local Delta College students who can work part-time around their classes. We're nearby and flexible enough to adapt to most Delta schedules. Our motto at Bavarian Inn is 'Earn while you learn.'"

Rhea Bartels, Human Resources Manager
Bavarian Inn Restaurant • Frankenmuth

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Karen M. MacArthur, Executive Director
Dr. Gene Packwood, Executive Director of
Administrative Services

Full-Time Faculty and Administrative/Professional Staff

ABBS, Kristin
Biology Lab Technician
B.S. Saginaw Valley State University

AIKEN, George
Corporate Services Instructor
B.S. Kean College

ALBRETSSEN, Ray
Corporate Services Quality Education Instructor
A.A.; A.S. Delta College

ALLEN, Barbara
Professor of Mathematics and Computer Science
B.S.; M.S. Michigan State University

ALLEN, Timothy
Assistant Professor of Mathematics and Computer Science
B.S. Central Michigan University
M.A. Wright State University

APPOLD, Tim
Corporate Services Instructor
Certified Welding Specialist, Delta College

ARNDT, Robert
Assistant Professor of Psychology
B.S. Carrol College
M.A. Bradley University

ARTHUR, Connie
Instructor of Speech
A.S. Delta College
B.S., M.A. Central Michigan University

AUGUSTINE, John
Associate Professor of English
B.A. University of Michigan
M.A. New York University

AULT, Robert
Corporate Services Manager Welding Services

AULT, Suzanne
Assistant Director of Human Resources
B.A. Michigan State University
M.S.A. Central Michigan University

BAILEY, David
Instructor of Biology
B.A. Hiram College
Ph.D. Case Western Reserve University

BAKER, Barry
Director of Communication Technology/
General Manager of Public Broadcasting
B.A. Wayne State University

BAKER, David
Instructor of Chemistry
M.S. University of Toledo
Ph.D. University of Leicester

BALASH, Terence
General Services Manager
B.B.A. Saginaw Valley State University
M.B.A. Wright State University

BARNES, J. Neal
Corporate Services Instructor
B.G.S. Texas Tech University
A.S. South Plains College

BASKIND, David
Instructor of Psychology
B.A. Miami University
M.A. Bowling Green State University

BAUER, Amy
Television Director/Editor Print
A.A.S. Delta College
B.A. Ferris State University

BEAM, Robert
Corporate Services Instructor
B.S. University of Texas
M.S. North Carolina State University

BEANE, Rose Margaret (Dr.)
Special Populations Outreach Specialist/Assessment Specialist
B.S. Wayne State University
M.Ed. Saginaw Valley State University
Ph.D. Michigan State University

BECKER, Jon
Assistant Director of Marketing & Public Information
A.A. Delta College
B.A. Central Michigan University

BECKSTROM, Garry
Planetarium Show Manager
B.S. University of Iowa

BEGEMAN, Theodore
Assistant Professor of Machine Tools
B.S. Michigan State University
M.S. University of Wisconsin - Stout

BEINS, Craig
Director of Law Enforcement
A.A. Delta College
B.A. Saginaw Valley State University
M.S. Central Michigan University

BENTON, Ralph
Auto Service Manager
A.A.S. Delta College
B.S. Western Michigan University

BICKEL, Kim
Sgt./Crime Prevention/Investigation
A.A. Delta College
B.S. Michigan State University

BIERI, Donald
Counselor Level IV
B.A. Aquinas College
M.A.; M.S. Troy State University
Licensed Professional Counselor

BLEDSON, David
Associate Professor of Residential Construction
B.S. Central Michigan University

BLUE, Beverly
Director of Community Health
R.N. Saginaw General Hospital School of Nursing
B.S. Siena Heights College
M.S.A. Central Michigan University

BOEKE, Robert
Professor of Business
B.B.A. University of Michigan
J.D. University of Wisconsin

BOWSKY, Robert
Broadcasting Engineer I
A.S. Delta College

BOYSE, Peter (Dr.)
President
B.A. Albion College
M.S. University of Michigan
M.S.; Ph.D. Oregon State University

BRENTIN, Louise
Associate Professor of Nursing & Division Chair
B.S. Duquesne University
M.S. Wayne State University

BRIESCHKE, Keith
Corporate Services Instructor
Certificate, Ferris State University

BRITTO, Neville
Professor of English
A.B. University of Nagpur, India
A.B. University of Rome, Italy
M.A. University of Michigan

BRONSTETTER, Michele
Team Supervisor, Physical Plant
A.A. Delta College

BROW, Judith
Librarian
A.B.; A.M.L.S. University of Michigan

BROWN, Roger
Purchasing Specialist
Diploma, Michigan State University

BUBLITZ, Kevin
Grounds Supervisor

BURKE, Nadine
Associate Professor of English
B.A. Michigan State University
M.A.T. Saginaw Valley State University

BUSHONG, Thelma
Assistant Professor of Accounting
B.A.; M.B.A. Saginaw Valley State University

BUTCHER, Larry
Professor of Art
B.S.; M.A. Central Michigan University

CABRERA, Dary
Corporate Services Instructor

CALDWELL, Patricia
Coordinator of Saginaw Off-Campus Centers
B.A. University of Michigan

CAMERON, David
Professor of Accounting & Business Division Chair
B.S.; M.S. Central Michigan University
Certified Public Accountant
Certified Management Accountant

CARLSON, Barry (Dr.)
Associate Professor of Geology
B.A.; M.A. University of Wisconsin
Ph.D. Michigan State University

CARLSON, Peter
Assistant Professor of Mathematics
B.S. Michigan Technological University
M.A. Central Michigan University

CARLSON, Richard
Coordinator of Communications Technology/Engineer
A.A.S. Delta College

CARSON, Clifford
Assistant Professor of Automotive
B.S.; M.Ed. Wayne State University

CLAREY, Timothy
Instructor of Geology
M.S. University of Wyoming
B.S., M.S., Ph.D. Western Michigan University

CLARK, James
Corporate Services Instructor

CLARK, Pamela
Membership/Underwriting Coordinator
A.A. Delta College
B.A. University of Michigan

COATS, Thomas J.
Services Instructor

COLE, John
Associate Dean/Director of Learning Resources
A.B.S. Delta College
B.A. Grand Valley State College
M.A. Central Michigan University

COLENBRANDER, Andrew
Honors/Possible Dream Program Director
A.A. Citrus Community College
B.A.; M.A. University of Montana
M.A. Central Michigan University

COLLIER, David
Corporate Services Instructor
A.A. Oklahoma City Community College

COLVIN, Richard
Building Systems Technician

COOKE, Arthur
Corporate Services Instructor
B.S., M.S. Case Western Reserve University

CORNEJO, Osiris
Assistant Professor of English
M.A.; M.A. Michigan State University

CORNELL, Paula
Assistant Professor of Nursing
A.A.S Delta College
B.S.N.; M.S.N. Saginaw Valley State University

CRANE, Janet Ann
Assistant Professor/Coordinator Child Development
B.A. Olivet College
M.A. Central Michigan University

CRAWFORD, Peggy
Assistant Professor of Lifelong Wellness/Fitness Director
B.S. Northern Michigan University
M.A. Central Michigan University

CRAWFORD, Randal
Assistant Professor of Art
B.F.A. Philadelphia College of Arts Pennsylvania
M.F.A. Cranbrook Academy of Art

CREED, Charles
Director of Human Resources
B.A.; M.A. Eastern Michigan University

CREED, Susan
Associate Professor of Office Systems Education
B.S. Eastern Michigan University
M.A. Central Michigan University

CROWELL, Jack
Professor of Mathematics and Computer Science
B.S.; M.S. Michigan State University
M.S. University of Illinois

CURRIE, George
Team Supervisor, Physical Plant

CYRUL, Jennean
Librarian
B.A. Saginaw Valley State University
M.L.S. Wayne State University

DEAN, Ruth
Instructor of Spanish
B.A. Universidad Pedagogica Nacional
M.A. Ohio State University

DENNEY, Dana
Assistant Professor of Reading and English
B.A.; M.A. Michigan State University

DeWALLS, Madlyn
Computer Training Specialist
B.S. University of New York

DOHERTY, Deborah (Dr.)
Instructor of Physical Therapist Assistant & Division Chair,
Health & Wellness
B.S. Northwestern University
M.A. Central Michigan University
Ph.D. Michigan State University

DOWIS, Dan
Director of Campus Police
B.S. Northern Arizona University

DUNN, John
Associate Professor of Economics
B.A. Grambling University
M.A. University of Toledo

DuRUSSEL, William
Technician Automotive Training Program

DZICK, Richard
Corporate Services
Instructor

DZURKA, Robert
Team Supervisor, Physical Plant

ECKERLE, Karl
Corporate Services Quality Education Instructor
A.S. Lansing Community College
B.S. Saginaw Valley State University

EDMONDSON-CONIC, Georgia
Associate Professor of Political Science
B.A.; M.A. Wayne State University

ELASHHAB, Julie
Assistant Professor of Nursing
B.S.N.; M.A. Michigan State University

ELDRIDGE-BALASH, Dorothy
Instructor of Nursing
B.S.N. Michigan State University
M.S.N. University of Kentucky

ELLISON, Gerald
Assistant Professor of English
A.S. Amarillo College
B.A.; M.A. Texas A & M

ENGBERG, Warren
Services Instructor
A.A. North Dakota State University

ENGER, Eldon
Professor of Biology
A.S. Alpena Community College
B.S.; M.S. University of Michigan

ERICKSON, Glen
Professor of Biology
A.S. Delta College
B.S. University of Michigan
M.S. University of Idaho

ESCOBAR, Edgardo
Corporate Services Instructor

EVERSON, Dana
Assistant Professor of Instrumental Music
A.A. Delta College
B.M.E.; M.M. Michigan State University
M.A. Pensacola Christian College

FACCIO, Bruce
Corporate Services Instructor
A.A.S.; B.S. Ferris State University
M.Ed. Saginaw Valley State University

FAULK, Marie
Counselor Level II
B.A. University of Colorado
M.S. Fort Valley State College
Licensed Professional Counselor

FERGUSON, Thomas
Corporate Services
B.A. Saginaw Valley State University

FINELLI, Michael
Instructor of Residential Construction
A.B. Delta College
B.S. Ferris State University

FLEMING, Christine
Traffic Continuity Coordinator

FLEMING, Robert
Instructional Media Specialist
B.A.; M.A. Western Michigan University

FOGARTY, Julia
Associate Professor of English
A.A. Ferris State University
B.A.; M.A. University of Oregon

FORSBERG, Ralph (Dr.)
Associate Professor of Philosophy
B.S. Bradley University
M.A. Roosevelt University
Ph.D. Loyola University

FRIEWALD, Thomas
Professor of Architectural Technology
B.S.; M.S. Stout State University

FRITZ-KELLY, Sandra
Associate Professor of Nursing
B.S. North Dakota State University
M.S. University of Minnesota

FROHM, Johanna
Instructional Training Coordinator
B.S.N. University of Iowa
R.N. Rockford Memorial School of Nursing
A.B.S. Delta College

FUHRMAN, Bradley
Corporate Services Instructor

GALLIHUGH, Jill
Criminal Justice Specialist

GARLICK, Michael
Learning Resources Technician Chemistry
B.S. Central Michigan University

GARNETT, Tom
Broadcasting/Assistant Chief Engineer/Operations Manager
A.A.S.; B.S. Ferris State University

GAVALAS, Kathleen
Associate Professor & Coordinator of Radiography
B.S. Ferris State University
M.Ed. University of Arizona
Registered Radiologic Technologist

GILBERT, Janet (Dr.)
Professor of English
B.A. DePauw University
M.A. University of Minnesota
Ph.D. University of Michigan

GILLETT, Marilyn
Director of Financial Aid
B.A.; M.A. Central Michigan University

GLYNN, Lawrence
Professor of History
B.A. Marquette University
M.A. Wayne State University

GODDARD, Susan
Coordinator of Corporate Employment
A.A. Delta College

GOETZINGER-PENA, Diane
Associate Professor of Office Systems Education
B.S. Central Michigan University
M.Ed. Texas A & I University

GONZALEZ, Judyth
Assistant Professor of Speech
B.A. Oral Roberts University
M.A. Southern Nazarene University

GOODBURNE, Louise
Associate Professor of Nursing
Diploma in Nursing, Albert Einstein Medical Center
B.S.N.; M.S.N. University of Pennsylvania

GOODSON, Martin, Jr. (Dr.)
Professor of Physics
B.S. Stillman College
M.S. Indiana State University
Ed.D. Indiana University

GORE, Suzanne
Assistant Professor of Nursing
B.S.N.; M.S.N. Montana State University

GRAVES, Patricia (Dr.)
Development Associate
B.S.; M.P.A. Central Michigan University
Ph.D. Michigan State University

GREENE, Nelson
Associate Professor of Science
B.A. Alma College
M.A. University of Michigan

GREENLEAF, Anne
Counseling Specialist
A.S. Delta College
B.S. Michigan State University

GREGORY, Earl
Assistant Professor & Program Coordinator of Respiratory Care
B.S. Saginaw Valley State University
M.S. Purdue University

GUTIERREZ, Dan
Instructor of Criminal Justice
B.A., M.A. Saginaw Valley State University

GUTIERREZ, Diana
Coordinator, Career Development
A.A. Delta College
B.A. Saginaw Valley State University

HAINES, Robert
Associate Professor of Automotive Services Technology
B.S. Ferris State University

HALOG, Donald
Professor of English
B.S. University of San Francisco
M.A. University of Illinois

HAM, James
Assistant Professor of Mathematics and Computer Science
B.A. Kalamazoo College
M.A. Ohio State University

HAMILTON, Earl
Corporate Service Instructor

HANNA, Gayle
Assistant Professor of Nursing
B.S.N. University of Michigan

HARRIS, Dianne
Assistant Director of Instructional Support Services

HARROLD, Valerie (Dr.)
Associate Professor of Speech
B.A.; M.A. Wayne State University
M.A.T. Saginaw Valley State University
Ph.D. Wayne State University

HARVEY, Cynthia
Associate Professor of Dental Hygiene
B.S. Hillsdale College
Certificate, University of Michigan
M.A. Central Michigan University
Registered Dental Hygienist

HATCHEW, Don
Associate Professor of Law Enforcement
B.S. Michigan State University
M.A. University of Detroit

HAYNES, Margaret (Dr.)
Associate Professor of English
B.A. Mount Holyoke College
M.A.T. John Hopkins University
M.A. Southern Illinois University
Ph.D. Michigan State University

HEAPS, Philip
Assistant Professor & Clinical Coordinator of Respiratory Care
A.A.S. Sinclair Community College
B.S. University of Dayton
M.A.T. Saginaw Valley State University

HEDRICK, Jacqueline
Manager Desktop/Graphic Design Center

HERLINE, Robert
Plant Engineer

HERSH, Leslie
Instructor of Chemistry
B.S. Albright College
M.S. Purdue University

HERT, Larry
Professor of English
B.A. University of Nebraska at Omaha
M.A. University of Arizona

HIATT, Mary Kate (Dr.)
Professor of Political Science
B.A.; M.A.; Ph.D. University of Southern Mississippi

HILL, Alan
Associate Professor of Sociology
B.A. Furman University
M.A. Columbia University
M. Phil. Columbia University

HILL, Paul
Assistant Professor of Music & Humanities Division Chair
B.A. Kent State University
M.M. New England Conservatory

HOAG, Robert
Assistant Professor of Computer Information Systems
B.S. University of Michigan

HOERNEMAN, Calvin
Professor of Economics
B.A. Bethany College
M.A. Michigan State University

HOFFMAN-JOHNSON, Gail
Associate Professor of Business
B.A. University of Michigan
M.S. Northern Michigan University

HOLZHEI, Donald (Dr.)
Professor of Automated Manufacturing
B.S. Michigan State University
M.S. Cornell University
Ph.D. Michigan State University

HOWARD, Joyce
Assistant Professor of Biology
B.S. Central Michigan University
M.S. Eastern Michigan University

HOWDEN, Richard
Associate Professor of Accounting
B.S.; M.B.A. Central Michigan University
Certified Public Accountant

HUTCHINSON, Daryl
Graphic Illustrator/Tech Writer

IMMEKUS, Kurt
Manager of Mfg. Training & Development
B.S. Washington University (Missouri)

IWAMASA, Ruby
TV 19/35 Station Manager
A.A. Hartnell Junior College
B.A. San Jose State University

JACOBS, Carol
Associate Professor of Business
B.S.; M.S. Indiana University

JAROSZ, Mitchell
Professor of English
B.A.; M.A. University of Detroit

JENKINS, Thomas
Corporate Services Instructor

JERNSTADT, Phyllis
Assistant Professor of Dental Assisting
A.A.; B.S.; M.S. Ferris State University
Registered Dental Assistant

JONES, Betty (Dr.)
Vice President of Instruction & Learning Services
B.S. Hampton Institute
M.S.W. Catholic University
Ph.D. University of Michigan

JONKER, Jack
Executive Director of Corporate Services
B.M.; M.M. University of Michigan

JUMP, Jeffrey
Assistant Director of Physical Plant
A.S.; B.S. Lake Superior State College

KARLS, Elaine
Instructor of English
B.A.; M.A. Michigan State University

KAZMIERSKI, Randy
Quality Assurance Coordinator
B.S. Saginaw Valley State University
M.A. University of Michigan-Flint

KEEFER, Ion
Associate Professor of Automotive Services Technology
B.A. Ferris State University
M.A. University of Michigan

KEICHER, Robert
Professor of Mathematics and Computer Science
A.A. Jackson Junior College
B.A. Western Michigan University
M.A.T. Indiana University

KELLER, Robert
Associate Professor of Biology
B.S. St. Mary's College
M.S. Wayne State University

KELLY, Terrance
Associate Professor of Residential Construction &
Technical Division Chair
A.A.S. Delta College
B.S. Ferris State University
M.A. Central Michigan University

KEMMER, Bruce
Associate Professor of Accounting
B.S. Central Michigan University
M.A. Eastern Michigan University
Certified Management Accountant

KENDZIORSKI, Janis
Associate Professor of Accounting
A.A. Grand Rapids Junior College
B.A. Michigan State University
M.B.A. Central Michigan University
Certified Public Accountant

KENNEDY, David
Assistant Professor of Psychology
B.A. Southern Illinois University
M.S. Iowa State University

KETCHUM, William, Jr.
Assistant Professor of English
B.A. Cornell University
M.A. University of Wisconsin, Madison

KHEIL, Habib
Associate Professor of Mathematics
B.S.E.E. Ohio University
M.S. Bradley University
M.S.E.E. Bradley University

KILAR, Jeremy (Dr.)
Professor of History
B.A. University of Detroit
M.A. Central Michigan University
Ph.D. University of Michigan

KLINGER, Timothy
Instructor of Mathematics and Computer Science
B.A. Capitol University
M.S. Purdue University
M.S. Oakland University

KNOX, diedra
Associate Professor of Biology
B.S.; M.S. Southern University

KOBLAS, Paul (Dr.)
Professor of Physics
B.S. University of California
M.S. University of Oregon
M.S.E.E. Michigan State University
Ph.D. University of Oregon

KOGELMAN, Richard
Assistant Professor & Co-op Coordinator
Business, Technical, and Science
A.A. Oakland Community College
B.S. Grand Valley State College
M.A. Western Michigan University

KOSTOFF, John
Professor of Mathematics and Computer Science
B.S.; M.S. Michigan State University

KRAUSS, Frederick (Dr.)
Assistant Professor of Physics
B.S.E. University of Michigan
M.S. Michigan State University
Ph.D. Purdue University

KRIEWall, Gloria
Manager of Library Program/Services
B.S. Michigan State University
M.L.S. San Jose State University

KUZDZAL, Stanley (Dr.)
Associate Professor of Business
A.B. Henry Ford Community College
B.S. Wayne State University
M.A. Eastern Michigan University
Ed.D. Wayne State University

LAVERTY, Jeannie
Research Associate
A.A. Delta College
B.B.A. Northwood University
M.S.A. Central Michigan University

LEATHERMAN, Bobby
Corporate Services Instructor

LEHRER, Sharon
Associate Professor of Sociology
B.A. Willamette University
M.A. University of Arizona
M.A.T. University of Idaho

LEPPIEN, Bruce, Jr.
Professor of Business
B.S. Ferris State University
M.B.A. Central Michigan University

LEVY, Lawrence
Professor of English
B.A. Ohio Wesleyan University
M.A. University of Wyoming

LEY, Constance
Corporate Services Instructor
B.S. Iowa State University
M.A. Central Michigan University

LIBBY, Glenn
Corporate Services Instructor

LIGHT, Timothy
Broadcast Engineer I
A.A.S. Delta College

LITZNER, Bernard
Broadcast Engineer II
B.S. Siena Heights College

LIVINGSTON, Raymond
Corporate Services Instructor
A.S. Bay De Noc Community College

LOOBY, Mary
Associate Professor of English
B.A. Nazareth College
M.A.T. Saginaw Valley State University

LORD, Charles
Learning Resources Technician
Lifelong Wellness
A.A. Northwestern Michigan College
B.S.; M.A. Central Michigan University

LOVAY, Denise
Associate Professor of Dental Hygiene
A.S.; B.S. Ferris State College
M.A. Central Michigan University
Registered Dental Hygienist

LUCZAK, Gregory
Corporate Services
Financial Analyst
B.A. Alma College
M.B.A. University of Michigan

LUTZ, Debra
Vice President of Finance and Business
A.A. Delta College
B.A. Michigan State University
M.A. Central Michigan University

LUTZ, Phoebe
Associate Professor of Mathematics and Computer Science
B.S. Alma College
M.S. Michigan State University

LYNCH, David
Corporate Services Instructor

MacARTHUR, Karen
Executive Director of Institutional Advancement
B.S. Purdue University
M.A. University of Maryland

MacDONALD, Tamara
Lab Technician
B.S. Michigan State University
M.S. Central Michigan University

MAHAFFEY, Shawna
Associate Professor of Fashion Merchandising
A.B. Lake Michigan College
B.S. Western Michigan University
M.A. Penn State University

MALLAK, Jeanne
Associate Professor of Office Systems Education
A.A.S. Northwood University
B.S.; M.B.E. Central Michigan University

MALMBERG, James
Associate Professor of Computer Information Systems
B.S. Central Michigan University
M.S. Ferris State University

MANNINEN, Maria
Associate Professor of Office Systems Education
B.S. Eastern Michigan University
M.S. Ferris State University

MARKEL, David
Learning Resources Technician Biology
B.S. Central Michigan University

MARTIN, Anne
Associate Professor of Mathematics and Computer Science
B.A. Oberlin College
M.A. University of Louisville

MAY, Margrethe
Professor & Coordinator of Surgical Technology
Certified Surgical Technologist
B.S.; M.S. University of Michigan

McCARTHY, Robert
Professor of English
B.S.; M.A. Central Michigan University

McCLIGGOTT, Judith
Instructional Fine Arts Specialist
A.A. Delta College
B.F.A. Michigan State University
M.A. Central Michigan University

McCORMICK, John
Associate Professor of Art
B.F.A.; M.A.; M.F.A. Michigan State University

McCOY, Marianna
Corporate Services Instructor

McGAW, Richard
Associate Professor of Speech
B.A. Albion College
M.A. University of Michigan

McGINTY, James
Associate Professor of English
B.A. University of Michigan
M.A. Central Michigan University

McGIVERN, Ralph
Associate Professor of CAD/CAM
B. Arch. University of Michigan
M.B.A. Central Michigan University

McGRATH, Peter
Learning Resources Technician Technical Division
A.A.S. Ferris State University

McINERNEY, Brian
Manager Apprentice/Trade Program
B.S. Ferris State University
M.S. University of Michigan

McNEAL, Dennis
Professor of Business
B.S. Northern Illinois University
M.A. Michigan State University

MEE, Robert
Associate Professor of Spanish
B.S. Kansas State Teacher's College
M.A. University of Missouri

MEHLHOSE, Marlene
Associate Professor of Nursing
M.S.N. Wayne State University
B.S.N.; M.S.N. Michigan State University

MENGER, Linda
Professor of Art and Photography
B.F.A. Michigan State University
M.A. Central Michigan University

MIELKE, Michael
Corporate Services Instructor
A.A. Montcalm Community College

MILITELLO, Michael
Corporate Services Instructor
B.S. Central Michigan University

MILLER, Judy
Associate Professor of Mathematics & Computer Science
B.S.; M.A. Central Michigan University

MIOTTO, Donald
Associate Professor of Machine Technology & Design
B.S. Eastern Michigan University
M.A. University of Michigan

MONTESI, Susan
Dean of Student and Educational Services
B.S. Ferris State University
M.A.; M.S. Central Michigan University
Licensed Professional Counselor
National Certified Counselor

MOODY, Carol
Instructor of Radiography
Registry, St. Mary's Hospital School of Radiologic Technology
B.A. - Health Management & Gerontology - Spring Arbor College

MOORE, Paul
Professor of Political Science
B.A.; M.A. Rutgers University

MORALES, Rosa
Senior Producer/Director
B.A. Michigan State University

MORAST, Gerald
Corporate Services Instructor

MORLEY, Cynthia
Corporate Services Training Consultant

MOSQUEDA, Margarita
Affirmative Action Officer & Director of
Chicano/Latino Services
B.A.; M.A. Western Michigan University

MOWLAVI, Masood
Instructor of Biology
B.S. Tehran University
M.S. Michigan State University
M.A.T. Wayne State University
Ph.D. Michigan State University

MUELLER, Rodney
Associate Professor of Machine Tools &
Computer Numerical Control
A.A. Delta College
B.S.; M.S. Ferris State University

MULLET, Patrick
Broadcast Engineer I
A.A.S.; B.S. Ferris State University

MURLEY, David
Assistant Director of Student Development Services
A.A. Delta College
B.S. Eastern Michigan University
M.Ed. University of Louisville
Limited Licensed Professional Counselor

MYLES-SANDERS, Leslie
Director of Planning/Legal Liaison
B.A. Scripps College
M.A.; J.D. Wayne State University

NATZKE, Catherine
Assistant Professor of Nursing
A.D. Jackson Junior College
B.S. Michigan State University
M.S.N. Wayne State University

NAVARRE, Kathleen (Dr.)
Assistant Professor of Social Science
B.A. Saginaw Valley State University
M.A.; Ph.D. University of Windsor

NELSON, Patrick
Corporate Services Computer Training Manager

NELSON, Preston
Corporate Services Instructor

NEUMAN, Sharon
Coordinator of TV/Radio Membership
A.A. Delta College
B.A. Saginaw Valley State University
M.S. Central Michigan University

NICHOLS, Katrina
Assistant Professor of Mathematics
A.A. Delta College
B.A. University of Michigan

NICKERSON, Nancy
Director of Career Development and Placement Services
B.A.; M.A. Michigan State University
Certified Rehabilitation Counselor
Licensed Professional Counselor
National Certified Counselor

NITSCHKE, Ann
Records and Registration Specialist
B.S. Central Michigan University

NORTON, Michael
Assistant Manager of Bookstore
B.S. Eastern Michigan University

NUECHTERLEIN, David
Broadcast Engineer II
Certificate, Ret's Electronic Technical School

O'BOYLE, Jeanette
Manager Fringe Benefits
A.A. Delta College

ORLANDI, Hector
Corporate Services Instructor
A.S., B.S. University of Puerto Rico

ORTENBURGER, Thomas
Assistant Professor of Sociology
A.A. Riverside City College
B.A.; M.A. University of California

O'TOOLE, Patricia
Professor of Lifelong Wellness
B.S. University of Detroit
M.S. University of Michigan

OTTO, Rebecca
Assistant Professor of Biology
B.S. Michigan State University
M.A. Central Michigan University

PACKWOOD, Glen Eugene (Dr.)
Director of Administrative Services
B.S.; M.S. Northeast Missouri State University
Ph.D. University of Missouri

PAEGLIS, Linda
Corporate Services Instructor

PARTHE, Mark
Broadcast Engineer II

PASZTOR, Joseph (Dr.)
Associate Professor of Geography
B.A.; B.E. University of Saskatchewan
M.S.; M.E.; Ph.D. University of Oregon

PEASE-HERNANDEZ, Christine
Professional Counselor
B.A. Saginaw Valley State University
M.A. Bowling Green State University
M.A. Central Michigan University
Professional Counselor License

PECK, Cynthia
Assistant Professor of Chemistry
B.A. Northern Michigan University
M.S. Central Michigan University

PENNOCK, Robert, Jr.
Corporate Services Instructor
A.A. DeVry Technical Institute
A.A.; B.S. Southern Illinois University

PEREGRINO, Santiago
Associate Professor of Political Science
B.S.; M.A. University of Texas, El Paso

PETEE, Linda
Administrative Assistant Physical Plant
A.A. Delta College
B.A. Northwood University

PETERSON, James
Assistant Professor of Mechanical Technology
B.S. Tri-State College
M.A. Eastern Michigan University

PETROWSKI, Michael
Systems Coordinator
A.A. Delta College

PETTIGROVE, Joianne
Professional Counselor
B.A. Houghton College, NY
M.A. Central Michigan University

PFEIFFER, Raymond (Dr.)
Professor of Philosophy
A.B. Kenyon College
M.A.; Ph.D. Washington University

PHILIP, William Charles
Dean of Instruction
B.A. California State University
M.S. George Peabody College
Ed.D. Vanderbilt University

PLACKOWSKI, Linda C.
Associate Professor of Philosophy
B.A.; M.A. Michigan State University

PRAST, Leslie
Professor of English & Division Chair
B.A. Michigan State University
M.A.T. Indiana University

PRETZER, Judy
Assistant Professor of Mathematics
B.S. Saginaw Valley State University
M.A. Central Michigan University

PRITCHETT, Rick
Corporate Services Instructor
A.A. St. Clair County Community College
B.S. Ferris State University

PRZYGOCKI, Virginia
Assistant Professor & Coordinator of Dental Hygiene
B.S. University of Michigan
Registered Dental Hygienist

PUGH, John
Administrative Assistant/Instructor
B.A. Florida A & M University
M.A. University of Toledo

RADLINSKI, Angela
Coordinator of Student Activities
B.S.; M.A. Central Michigan University

RADLINSKI, Paul
Associate Professor of Lifelong Wellness
B.S.; M.Ed. Bowling Green University

RAMM, Joan
Student Publications Advisor & Associate Professor of English
B.A. Wayne State University
M.A. Michigan State University

RAMSEYER, Larry
Director of Physical Plant
A.A. Delta College
B.S.; M.A. University of Michigan

RANDALL, James Patrick
Library Computer Technician
B.B.A. Baker College

REDMAN, Bruce (Dr.)
Assistant Professor of Mathematics & Computer Science
B.S. University of California
M.S. University of Minnesota
Ph.D. University of Wisconsin

REED, David
Corporate Services Instructor
B.S. Ferris State University

REMENSNYDER, James
Corporate Services Training Program/Services Developer

RENKER, Fred
Professor of English
B.A. University of Notre Dame
M.A.T. Duke University
M.A. California State University

RENNA, Pamela (Dr.)
Associate Professor of French
B.A. University of Oregon
M.A. University of Illinois
Ph.D. Brown University

REX, Martha
Accountant
A.A. Delta College
B.A. Saginaw Valley State University

RICHARDSON, Willie, Jr.
Dean of Community Services
B.S.; M.A.; Ed.S. Central Michigan University

RICKEY, Betty
Associate Professor of Nursing
L.P.N. Kellogg Community College
A.A. Delta College
B.S. Saginaw Valley State University
M.S. Wayne State University

RINDERER, Regina (Dr.)
Assistant Professor of English
A.B. University of Pittsburgh
M.A.; Ph.D. Ohio State University

RIPPLE, Darien
Instructor of Philosophy
B.A. Salisbury State University
M.A. West Chester University

ROBERTSON, Mark
Assistant Professor of Biology
B.A. University of Virginia
M.S. Virginia Poly. Institute State University

ROBINS, SYLVIA
Associate Professor of English
B.A.; M.A. University of California-Berkeley

ROCK, Terrence
Director of Marketing & Public Information
A.A. Delta College
B.S. Eastern Michigan University
M.A. Central Michigan University

ROGERS, David
Manager Saturn Training

ROGERS, Robert
Broadcast Engineer I
A.A. Delta College

ROMEO, Jeanne
Professor of Mathematics and Computer Science
B.A. College of St. Vincent
M.A. Syracuse University
M.A. Illinois State University

ROMER, S. Scanlon
Instructor of Economics
B.A. University of Minnesota
M.S. University of Utah

ROSS, Frederick
Professor of Biology
B.S.; M.S. Wayne State University

ROZNOWSKI, James
Professor of Mathematics and Computer Science
& Division Chair
B.S.; M.A. Central Michigan University

RUSSELL, Carolyn
Manager of Printing/Mail
A.A. Delta College
B.B.A. Northwood University

RUTH, Carl
Admissions/F.A. Representative
B.S. Western Michigan University
M.A. Central Michigan University

SABOURIN, Joan Marie
Professor of Chemistry & Science Division Chair
B.S. Aquinas College
M.S. Purdue University

SANDFORD, Carolyn
Associate Professor of Biology
B.A. Lawrence University
M.A. Saginaw Valley State University

SAPIELAK, William
Corporate Services Business Development Coordinator

SAVAGE, Audrey
Assistant Professor & Co-op Coordinator Secretarial Science
B.S. Mississippi Valley State University
M.A. Central Michigan University

SCHAFER, Daniel
Associate Professor of Accounting
A.S. Delta College
B.B.A. Saginaw Valley State University
M.B.A. Central Michigan University

SCHAUB, Maureen
Lead Teacher - Child Care
B.A.; M.A. Michigan State University

SCHMIDT, Dawn
Professor of Mathematics
A.S. Delta College
B.A. Saginaw Valley State University
M.A. Central Michigan University

SCHUENEMAN, Constance
Associate Professor of Computer Information Systems
B.S. Ohio State University
M.S. Michigan State University

SCHUITMAN, Jerry
Associate Professor of Mathematics
A.S. Grand Rapids Junior College
B.S.; M.A. Western Michigan University

SCHULTZ, Brian
Corporate Services Welding Assistant
Certificate, Hobart School of Welding

SCORSONE, Diane
Financial Aid Representative
B.A.; M.A. University of Michigan
Licensed Professional Counselor

SEIDEL, Paul
Corporate Services Manager Automotive Training Programs
A.A.S. Delta College
B.S. Ferris State University
M.A. Central Michigan University

SHARP, Ronald
Professor of Chemistry
B.S.; M.S. Central Michigan University

SHARPER, Howard
Manager of Program/Production FM
B.A. Saginaw Valley State University

SHELTON, Joy
Director of Home and Family Living/Community Services
B.S. University of Texas

SHORT, Diane
Director of African-American Services
B.A. Fisk University
M.A. University of Detroit
Licensed Professional Counselor

SIASOCO, Hope
Librarian
B.A. Saginaw Valley State University
M.L.S. University of Michigan

SIEH, April
Assistant Professor of Nursing
B.S. Oakland University
M.S. Wayne State University

SIKA, Elvina
Admissions Representative
B.S. Michigan State University

SILK, Amy
Development Officer
B.S. Michigan State University

SMITH, Pamela
Assistant Professor of Dental Assisting
A.S. Delta College
B.S. Ferris State University
M.S. Central Michigan University

SORBERA, Mary Jane
FM Public Radio Announcer

SOZA, Daniel, Jr.
Student Development Specialist/Organizational
Peer Mentor Coordinator
A.A.S. Delta College
B.S. Michigan State University
M.Ed. Antioch College

SPEER, Jane
Tutoring Coordinator
B.A. Central Michigan University

SPILLER, Leroy (Dr.)
Professor of English
B.A. LaSalle College
M.A. University of Toledo
Ph.D. Michigan State University

SPITZ, Albert
Instructor of Physical Therapist Assistant
A.A.S. Delta College
B.S. Central Michigan University

STEPHENS, Wesley
Corporate Services Coordinator of Statistical Process Control
B.A., M.A. Michigan State University

STILL, James (Dr.)
Professor of Lifelong Wellness
B.S. St. Joseph's College
M.Ed. Bowling Green University
Ph.D. Michigan State University

STITT, Teresa
Admissions Representative
B.S.; M.Ed. Alabama State University
Licensed Professional Counselor

SULLIVAN, Matthew
Facilities Planner
A.A. Delta College
B.S. University of Michigan

SUURNA, Harry
Counselor Level IV
B.A. Lake Superior State College
M.A.; M.A.; M.A.; Western Michigan University
Licensed Professional Counselor

TARRANT, Laura
Unit Manager, Organizational Skills Development
B.S. Saginaw Valley State University

TEDROW, Barbara
Director of International/Intercultural Programs
B.S. Indiana University
M.A. Michigan State University

TEMPERLY, Deborah
Assistant Professor of Biology
B.S., M.S. University of Illinois

THAYER, Edward
Corporate Services Services Manager

THAYER, Russell
Associate Professor of Art
B.S.; M.A. University of Michigan

THEBERT, Robert
Corporate Services Instructor

THOMPSON, JP (Dr.)
Assistant to the Executive Director of Communication Technology
B.A. Michigan State University
M.S.A. Central Michigan University
Ph.D. Michigan State University

THOMPSON, Willie
Vice President of Student and Educational Services
A.A. Bay City Junior College
B.S. Western Michigan University
M.A. University of Michigan
Licensed Professional Counselor

TINGSTAD, Jerry
Associate Professor of Political Science
B.S.; M.S. University of Wisconsin

TOBIE, Chris
Corporate Services Instructor

TORNS, Sandra
Counselor Level IV
A.A. Genesee Junior College
B.S.; M.A. Central Michigan University
National Certified Counselor

TORREZ, Mary Ellen
Multicultural Specialist/M.I.C.U.P. Coordinator
B.A. Saginaw Valley State University
M.A. Central Michigan University

TOWN, Edward
Controller
B.S. Central Michigan University

URBANO, Charissa (Dr.)
Associate Professor of Biology
B.S. Bowling Green State University
M.A.; Ed.D. Ball State University

VADER-McCORMICK, Nancy
Instructor of Speech
B.A. Central Michigan University
M.A. Western Michigan University

VALKENBURG, James
Director of Teaching Learning Center
B.A., M.A. William Paterson College

VANHOUTEN, Jacob
Manager Environmental Health/Safety Compliance
B.S. Ferris State University
M.S. Central Michigan University

VANSTEENHOUSE, Victoria
Assistant Professor of Applied Behavioral Sciences
B.A.; M.A. Saginaw Valley State University

VERHANOVITZ, James
Professor of Mathematics and Computer Science
B.S. Saginaw Valley State University
A.M. University of Michigan

WACKERLY, Michael
Associate Professor of Computer Information Systems
A.S. Delta College
B.S. Saginaw Valley State University
M.S. Central Michigan University

WALLEN, Carrie
Assistant Director of Food Services
B.S. Michigan State University

WAXMAN, Ellen B.
Assessment/Testing Coordinator
B.A. City University of New York
M.A. Michigan State University
Licensed Professional Counselor

WEBB, Barbara
Assistant Director of Business Services
B.A.; M.A. Central Michigan University

WEEDMAN, Roslyn
Assistant Professor of English
B.A.; M.A. University of Michigan

WEISHEIM, William
Auto Services Facility Technician

WEISS, Timothy
Corporate Services Instructor
B.S.; M.A. Central Michigan University

WESTBROOK, Beverly
Associate Professor of Business
B.B.A.; M.A. University of Iowa

WHITE, Ben
Corporate Services Instructor
A.S. Polk Community College

WHITE, Jeanne
Assistant Professor of Nursing
A.S. Schoolcraft College
B.S. Madonna College
M.S. University of Michigan

WHITE, Mona
Assistant Professor of Nursing
A.S. Delta College
B.S. Saginaw Valley State University

WHITNEY, Judy
Financial Aid Representative
B.A. Hope College
M.A. Saginaw Valley State University

WHITNEY, Shelly
Assistant Controller
B.B.A. Saginaw Valley State University

WIELAND, Kent
Production Manager
A.A. Delta College
B.A. Ferris State University

WIELAND, Rebecca
Assistant Dean of Academic Affairs
B.S. University of Wisconsin
M.A. Central Michigan University

WIERDA, Lori
Associate Professor of Nursing
B.S.N. Saginaw Valley State University
M.S. University of Michigan

WIERZBICKI, Marguerite
Corporate Services Instructor

WIGHT, Sandra
Director of Health Services
B.S.N. Michigan State University

WILEY, Sarah
Assistant Professor of History
B.A. University of Alabama
M.A. University of Montana

WILHELM, John
Professor of Political Science
B.A. Ohio State University
J.D. University of Michigan Law School

WILLIAMS, David
Associate Professor of Geography
B.S. Central Michigan University
M.A. Western Michigan University

WILLIAMS, James
Corporate Services Instructor

WILLIAMS, Jennifer
Associate Professor of Psychology
B.S., M.S. Eastern Michigan University

WILSON, Karen
Professor of Economics & Social Science Division Chair
A.A. Delta College
B.A. Saginaw Valley State University
M.A. Central Michigan University

WIRTZ, Caroline
Associate Dean of Academic Affairs
B.A. Capital University
M.S.Ed. University of Dayton

WOIDERSKI, Larry
Director of Counseling
B.S.; M.A. Central Michigan University
Licensed Professional Counselor
National Certified Counselor

WOJCIK, Bonifacia
Associate Professor of Nursing
B.S.N. University of Santo Tomas
M.A. Central Michigan University

WOLVERTON, Jim
Producer/Director TV
A.A.S. Delta College
B.S. Ferris State University

WOOD, Janet
Planetarium Activities & Operations Specialist
A.A. Delta College

WOODARD, Nancy
Assistant Professor of English
B.S. Grambling College of Louisiana
M.A. University of New Orleans

WORTHING, Ralph (Dr.)
Assistant Professor of Psychology
B.S.; M.S. University of Wisconsin
Ph.D. Iowa State University

ZIEMAN, Beth
Instructor of Nursing
RN Delta College
B.S.N. Regents School of Nursing

ZUBE, Duff
Interim Director of Admissions
Director of Records & Registration and Veterans' Services
A.A. Delta College
B.A. Saginaw Valley State University
M.S.A. Central Michigan University

Definitions of College Terms

Don't get lost in College jargon. Understand these terms, which generally are common to all colleges, and your academic life will be easier.

Academic Year: September through the following August. Includes the Fall Semester, Winter Semester, Spring Semester, and Summer Session.

Academic Credits: See Credits.

Accredited: Certified by a specific state, regional, or national organization as meeting standards of quality in instruction, staffing, facilities, finances, and policies.

Add: Changing your schedule by adding a course after your initial registration.

Admission: Being accepted by Delta so you can register for courses.

Assessment: Basic skills tests in English, reading, and math to assist you in selecting courses at the appropriate level. Generally, assessment is required for new students. See Section II, The Enrollment Process, Steps to Success for details.

Associate Degree: Degree (diploma) granted after successful completion of a program of study which has a minimum of 62 credits.

Audit: Registering for and attending a course, but receiving no grade or credits. Regular tuition and fees must be paid. Audits do not count toward completion of a program or graduation.

Centers: See Off-Campus Centers.

Certificate: Document granted upon successful completion of a program of study which has a minimum of 24 credits.

Concurrent Course: Often referred to as Corequisite. A course that must be taken during the same semester as another course is taken. Concurrent courses are listed at the beginning of the course description. See Section VI for Academic Course Descriptions.

Contact Hours: The total hours of lecture and laboratory instruction required for each course.

Corequisite: See Concurrent Course.

Course: A single subject, such as ENG 111, taken for one semester.

Credits: Also referred to as Academic Credits, Credit Hours, and Semester Hours. Each course is assigned a number of credits which generally indicates the number of hours per week the class meets; i.e., a three credit course generally meets three hours each week. Courses with labs and occupational courses, however, generally meet more hours than the number of credits they carry. Tuition and fees are ordinarily charged by credit.

Curriculum: See Program of Study.

Drop: Changing your schedule by dropping a course after your initial registration.

Dual Degree: An Associate degree that is earned by completing two specified curricula concurrently. Approved curricula combinations are listed in Section III, page 51.

Elective: A course you may elect (choose) to take as opposed to a course you are required to take.

Fees: Special charges for courses or services other than tuition.

Financial Aid: Money received from various sources (grants, loans, scholarships, jobs) to help students with college costs. Most, but not all, forms of aid are based on financial need.

Financial Aid Transcript: A document you are required by federal regulations to have every other college you attended send to the Delta College Office of Financial Aid, which lists any federal aid you may have received or states that you received no aid. Required of financial aid recipients before aid can be awarded.

Full-Time Student: Enrolled in 12 or more credits in a semester.

G.E.D. (General Educational Development): A high school equivalency certificate for adults who did not receive the traditional high school diploma. It is earned by passing the national G.E.D. exam, which may be taken through Delta Assessment/Testing Services Office.

General Education: A group of courses in the areas of social science, natural/physical science, communication, and humanities which provide a common and broadly-based body of knowledge.

GPA (Grade Point Average): The GPA is determined by dividing the honor points earned (see definition of honor points) by the number of credits attempted, excluding courses in which you received final grades of "P," "I," "X," "WP," "WE," "W," or "NC." The semester GPA includes grades in each semester; the cumulative GPA includes grades from all semesters at Delta.

Grade Dispute: The process available to you if you do not agree with the grade you received in a course. See Section IV, Academic Policies and Information, Disputed Final Grade Policy.

Grade Ombudsman: The staff member who will provide you with information and assistance in understanding and following the Grade Dispute process. For name of person, contact Senate Office.

Graduation Requirements: Specific steps you must successfully complete to qualify for a degree or certificate. See Section IV, Academic Policies & Information, Graduation Requirements for details.

Grants: Money provided for educational expenses which does not have to be repaid; also called "gift aid."

Honor Points: Numerical values assigned to a letter grade for a course ("A"=4 pts., "B"=3 pts., "C"=2 pts., "D"=1 pt., "E"=0 pts.), which are then multiplied by the number of credits assigned to the course; i.e., a "B" grade for a three credit course would have three honor points x three credits = 9 honor points.

In-District Student: A legal resident of Bay, Midland, or Saginaw county as defined by the Delta College residency policy.

Instructor-Initiated Drop: Being dropped from your course by your instructor for either lack of attendance or lack of the required prerequisites.

Loans: Money you borrow from your bank or credit union for educational expenses which must be repaid after you leave school.

MACRAO: A transfer agreement between many Michigan two- and four-year colleges, which standardizes the basic general education requirements. See Section III, Programs of Study, page 24, for details.

Ombudsman: See Grade Ombudsman.

Orientation: A program you will participate in as a new Delta student, which will acquaint you with the College facilities, programs, services, and procedures and during which a counselor will assist you in reviewing your program and selecting your courses. See Section II, The Enrollment Process, Steps to Success for details.

Out-of-District Student: A legal resident of Michigan, residing in a county other than Bay, Midland, or Saginaw.

Out-of-State Student: A legal resident of a state other than Michigan or of a foreign country.

Part-Time Student: Enrolled in less than 12 credits in a semester.

Prerequisite: Courses which must be successfully completed or requirements which must be met before enrolling in a specific course. Prerequisites are listed at the beginning of the course description. See Section VI for Academic Course Descriptions.

Probation: A warning status due to low grades or improper conduct.

Program of Study: A group of specific courses which you are required to complete successfully in order to qualify for a degree or certificate.

Registration: The time when you enroll in your courses and pay your tuition and fees. See Section II, The Enrollment Process, Registration for details.

Required Course: A course in your program that you must take as opposed to one that you elect (choose) to take.

Schedule of Academic Classes Booklet: A Delta publication which lists all the courses being offered that semester, the days and times when they will be offered, the location (on or off-Campus) where they will be held, the course fees, the instructors, and the registration schedule. These schedules are published for each semester or session.

Semester: Generally 15 weeks in length. The three semesters in an academic year at Delta are Fall (late August through December), Winter (January through April), and Spring/Summer (May through August).

Semester Hours: See Credits.

Session: Generally, 7 1/2 weeks in length, which is half the length of a semester. The two primary sessions in an academic year at Delta are Spring (May through June) and Summer (July through August).

Service Credits: Credits assigned to Community Service courses. These credits are not applicable to a Delta Associate degree or Certificate and are not transferable to other colleges.

Steps to Success (STS): A process in which you will participate as a new student, which includes Assessment, Orientation, and Registration. See Section II, The Enrollment Process, Steps to Success for details.

Suspension: Being required to leave Delta College due to a very low grade point average or unacceptable conduct.

Transcript: Your official Delta College record listing all academic courses attempted with grades, credits, and honor points; all transfer credits accepted; any credit awarded by examination or advanced placement; and your cumulative GPA.

Transfer: The official process of moving from attendance at one college or university to attendance at another college or university.

Tuition: The money you pay the College for instruction and services. A dollar amount is assigned to each credit. Tuition is determined by multiplying the dollar amount by the number of credits for which you are registering. In-District, Out-of-District, and Out-of-State tuition rates are different. See the Schedule of Academic Classes booklet for current tuition rates.

Withdrawal: Dropping all of your courses and leaving Delta College. Official withdrawal must be done through the Records & Registration Office.



An Employer's Opinion

"Delta College has a recognized Criminal Justice Program which presents the opportunity for individuals to receive the needed education for entry into the Michigan Department of Corrections' Officer Corps. Delta graduates entering the Corrections Academy come prepared to meet the challenges of one of the toughest careers in criminal justice."

Luella R. Burke, Warden,
Saginaw Correctional Facility

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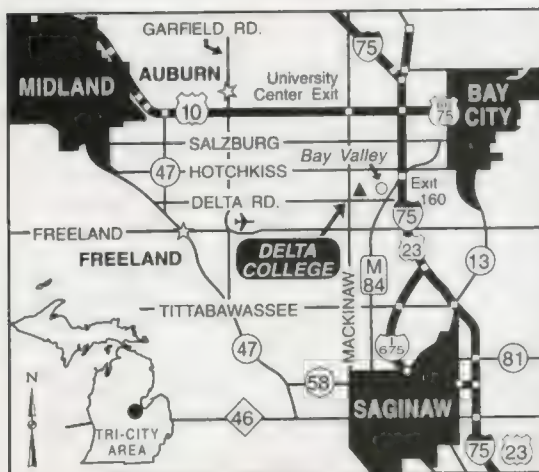
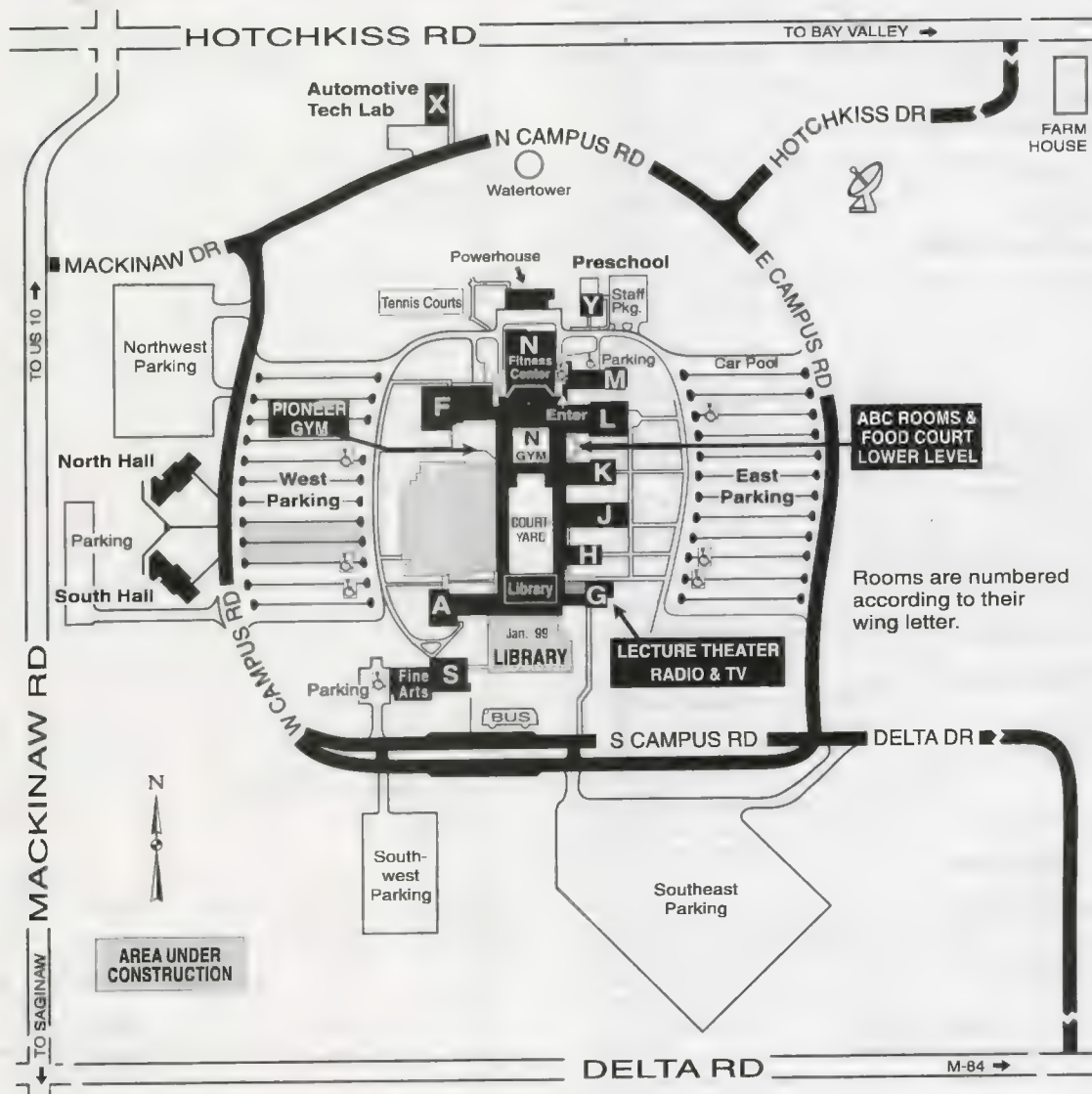
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DELTA COLLEGE MAIN CAMPUS



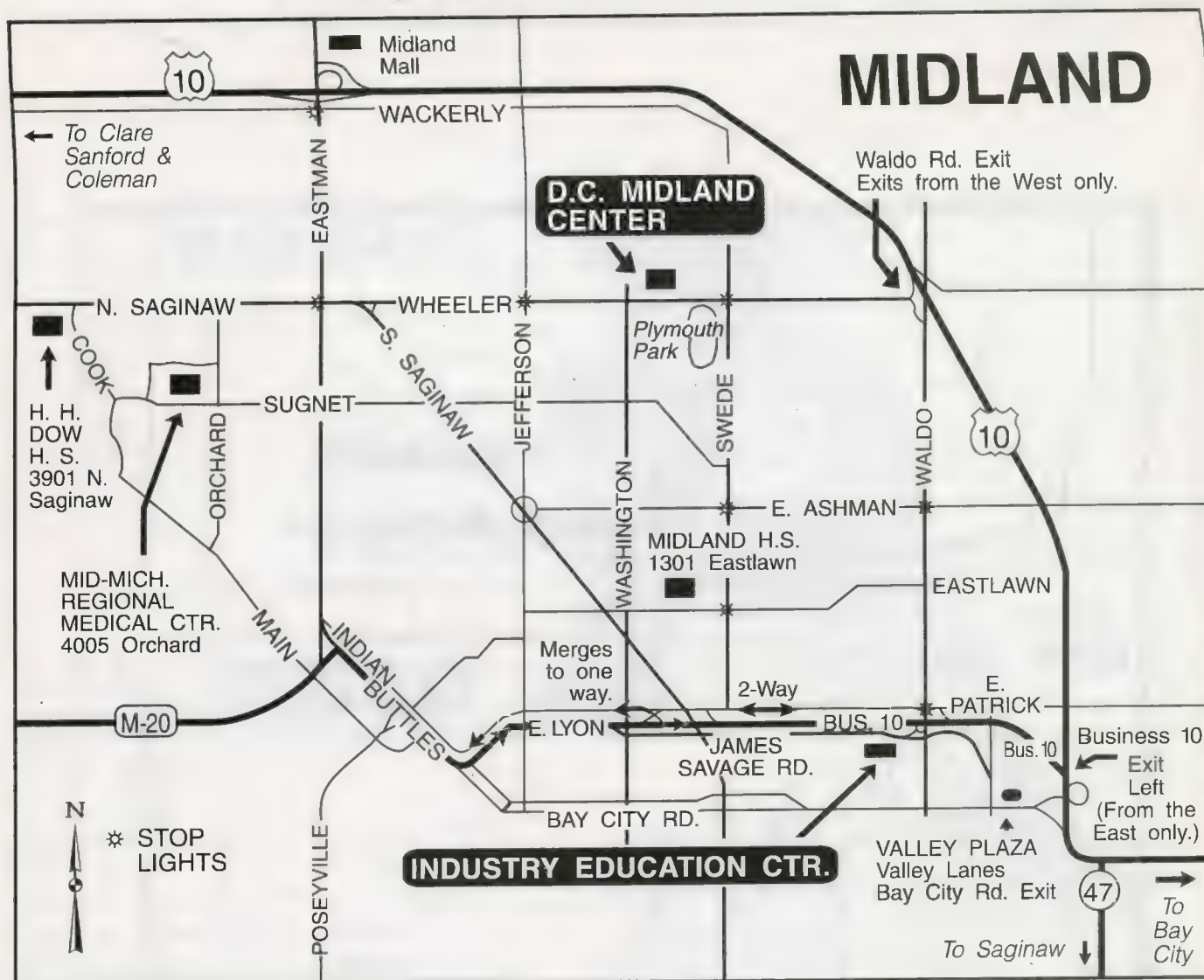
From I-75

Take exit 160, turn south onto M-84. Go to the first traffic light and turn right onto Delta Road. Travel 1 mile and the College is on the right.

From US-10

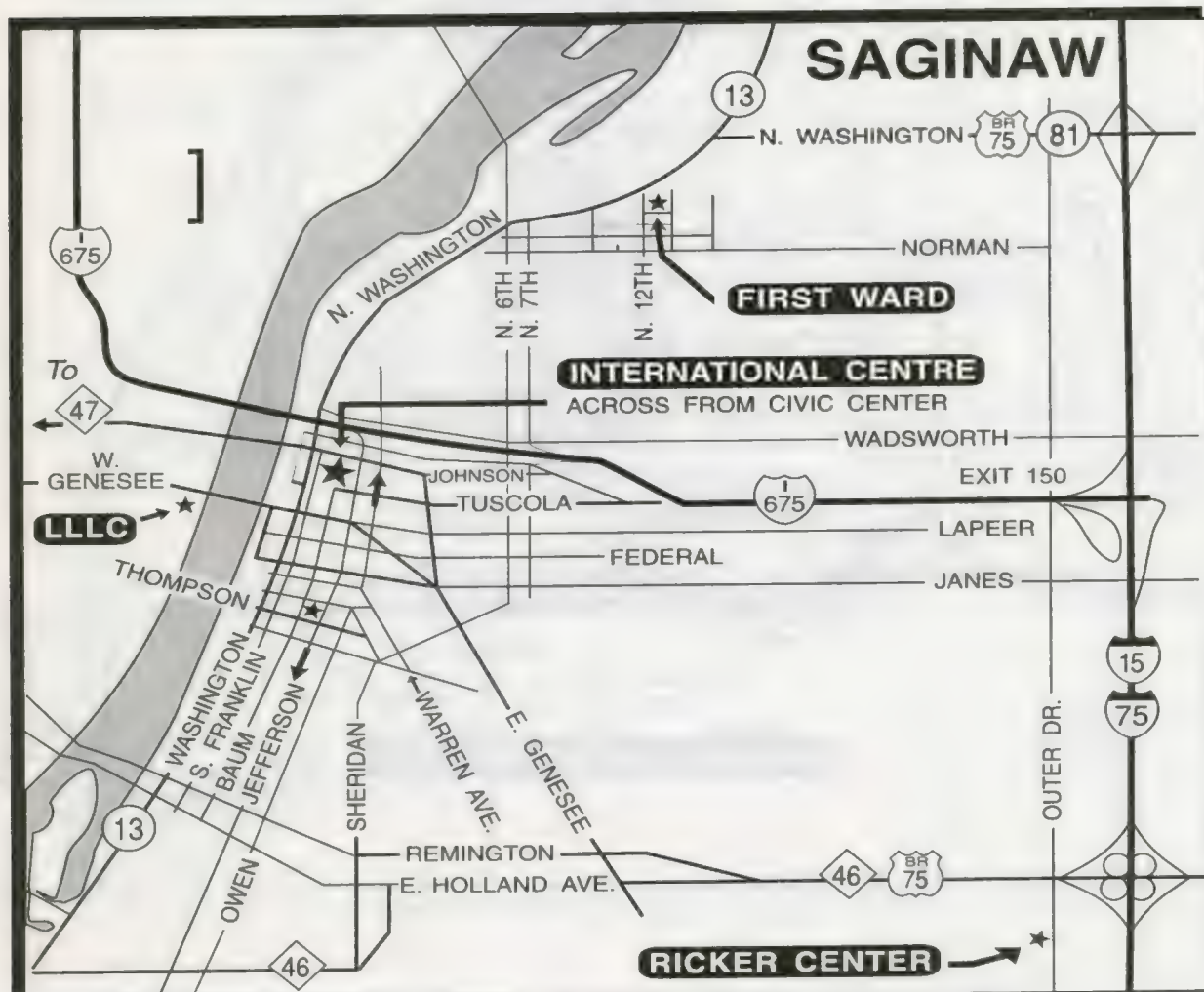
Exit south at the Mackinaw Road exit onto Mackinaw Road. Travel about 2 miles, past the blinker light at the Hotchkiss Road intersection. College entrance is on the left.

DELTA COLLEGE MIDLAND CENTER & INDUSTRY EDUCATION CENTER



Midland Center
 1025 East Wheeler
 (517) 835-2240

Industry Education Center
 3024 James Savage Road
 (517) 496-3368



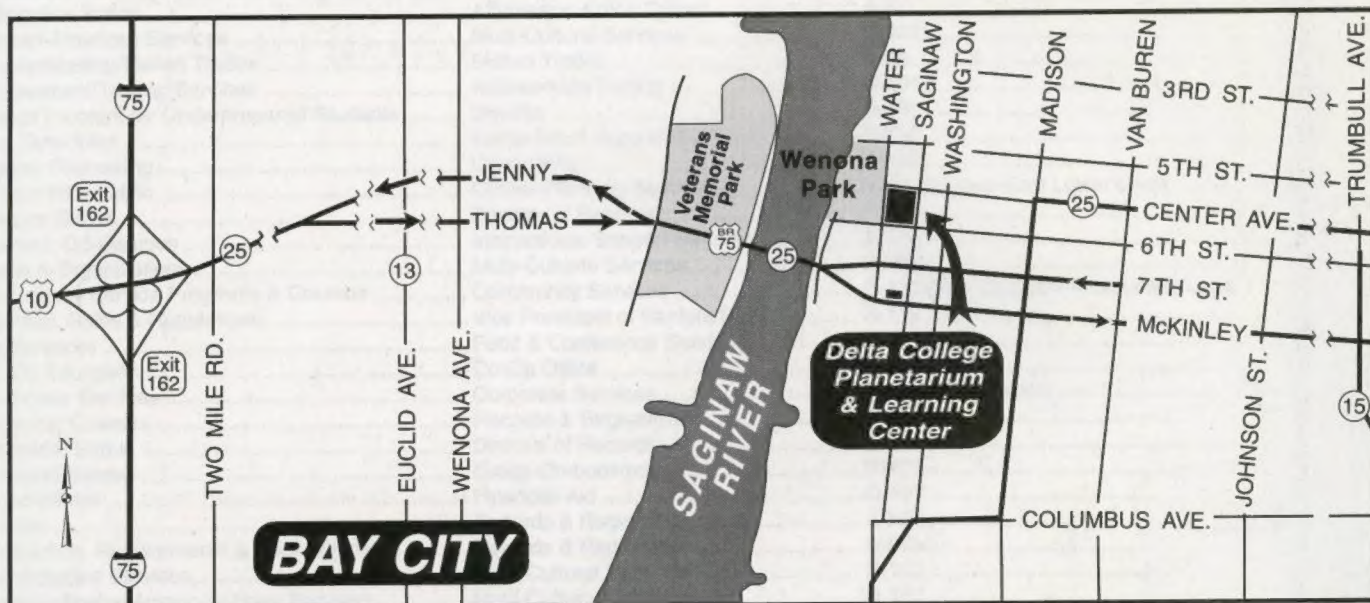
First Ward
1410 N. 12th
(517) 754-4443

Ricker Center
1925 S. Outer Dr.
(517) 752-7500

**Ruben Daniel Lifelong
Learning Center (LLLC)**
115 W. Genesee
(517) 776-0600

International Centre
310 Johnson
(517) 758-3600

100 Center Avenue, Bay City, MI 48708 • Phone: (517) 667-2260 • Fax: (517) 667-2266



FROM I-75 (North and South)

- Take exit 162 to downtown Bay City/M-25.
- Continue on one way Thomas Street.
- Cross over river to first stop light (Holiday Inn on corner.)
- Turn left at stop light onto Saginaw Street and go two blocks to 6th Street.
- **CARS:** Turn left onto 6th Street to enter Delta parking lot.
- **BUSSES:** Turn left onto 6th Street, turn right onto Water and park at Planetarium entrance.

FROM U.S.-10 (Auburn/Midland Areas)

- U.S. 10 crosses over I-75 and becomes M-25 into downtown Bay City.
- Continue on one way Thomas Street.
- Cross over river to first stop light (Holiday Inn on corner.)
- Turn left at stop light onto Saginaw Street and go two blocks to 6th Street.
- **CARS:** Turn left onto 6th Street to enter Delta parking lot.
- **BUSSES:** Turn left onto 6th Street, turn right onto Water and park at Planetarium entrance.

100 Canal Avenue, Bay City, MI 48706 • Phone: (517) 667-5580 • Fax: (517) 667-2286



FROM I-75 (North and South)

- Exit 182 to downtown Bay City, MI 48706
- Continue on one way Thomas Street
- Cross over river to first stop light (Saginaw Ave) on corner of 1st St
- Turn left at stop light onto Saginaw Riverfront
- Go two blocks to 2nd St
- CARS: Turn left onto 2nd Street to enter Delta building lot
- BUSES: Turn left onto 2nd Street, turn right onto Delta building lot

FROM U.S.-10 (Arenaworld and Airport)

- U.S. 10 bypasses I-75 and becomes I-75 north of downtown Bay City
- Cross over river to first stop light (Hawthorn Inn on corner of 1st St)
- Turn left at stop light onto Saginaw Riverfront and go two blocks to 2nd St
- CARS: Turn left onto 2nd Street to enter Delta building lot
- BUSES: Turn left onto 2nd Street, turn right onto Delta building lot

Bay City International Airport
1000 E. 10th St
Bay City, MI 48706
(517) 667-1234

Who to Contact

To Ask Questions About:	Contact:	Location:	Phone Extension:
Academic Advising	Counseling	D-102	9794
Academic Standards	Director of Records	D-101	9681
Activities	Multi-Cultural Services	D-102	9336
Adding Courses	Records & Registration	A-Wing	9305
Admissions	Admissions	D-101	9093
Affirmative Action	Affirmative Action Officer	A-2	9547
African-American Services	Multi-Cultural Services	D-102	9121
Apprenticeship/Skilled Trades	Skilled Trades	A-55	9438
Assessment/Testing Services	Assessment/Testing	D-101	9338
Bridge Program for Underprepared Students	Director	J-100	9163
Bus Schedules	Instructional Support Services	E-130	9221
Career Counseling	Counseling	D-102	9794
Career Information	Career Planning Services	Main Campus-East Lower Level	9072
Caution Status	Director of Records	D-101	9681
Centers, Off-Campus	Instructional Support Services	E-130	9221
Clubs & Organizations	Multi-Cultural Services	D-102	9336
Community Service Programs & Courses	Community Services	E-130/Main Campus-West Lower Level	9412
Conduct, Rules & Regulations	Vice President of Student Services	A-119	9340
Conferences	Food & Conference Services	B-35	9037
Co-Op Education	Co-Op Office	F-40	9474
Corporate Services	Corporate Services	International Center	758-3600
Dropping Courses	Records & Registration	A-Wing	9305
Dismissal Status	Director of Records	D-101	9681
Disputed Grades	Grade Ombudsman	D-101	9320
Financial Aid	Financial Aid	D-101	9080
Grades	Records & Registration	A-Wing	9539
Graduation, Requirements & Applications	Records & Registration	A-Wing	9305
Handicapped Services	Multi-Cultural Services	D-102	9096
Hispanic/Native American/Asian Services	Multi-Cultural Services	D-102	9125
Honors Program	Honors Office	J-100	9617
Illness, Injury, Health Concerns & Insurance	Health Services	N-102	9333
Incomplete Grades	Course Teacher	—	—
International Students	Admissions	D-101	9093
Jobs, Part/Full-Time, On/Off-Campus	Placement Center	Main Campus-East Lower Level	9074
Judicial/Due Process	Vice President Student Services	A-119	9340
Library	Library	Main Campus-South	9307
Lost and Found	Campus Police	N-102	9111
Orientation for New Students	Counseling	D-102	9794
Parking	Campus Police	N-102	9111
Personal Problems	Counseling	D-102	9794
Pre-School Child Care	Pre-School	Y-100	9334
Probation Status	Director of Records	D-101	9681
Public Information	Marketing & Public Information	A-Wing	9490
Registration	Records & Registration	A-Wing	9305
Residency Qualifications	Admissions	D-101	9093
Rights, Student	Vice President of Student Services	A-119	9340
Security, Campus	Campus Police	N-102	9111
Sexual Harassment	Affirmative Action	A-2	9547
Single Parent/Homemaker & Sex Equity Program	Director	D-102	9390
Sports, Intercollegiate & Intramural	Lifelong Wellness	N-140	9023
Teaching/Learning Center Services	Director	Main Campus-East Lower Level	9314
Tech Prep	Academic Services	J-102	9521
Telecourses	Telelearning Network Services	Main Campus-West Lower Level	9398
Textbooks & Class Supplies	Bookstore	Main Campus-Lower Level Food Court	9030
Traffic Regulations & Violations	Campus Police	N-102	9111
Transcript Requests	Records & Registration	A-Wing	9305
Transfer Credit Acceptance	Records & Registration	A-Wing	9554
Transfer to Another College	Counseling	D-102	9794
Transferability of Delta Courses	Counseling	D-102	9794
Tutoring	Teaching/Learning Center	Main Campus-East Lower Level	9314
V.A. Benefits, Certification & Information	Veterans	A-Wing	9465
Volunteer Program	Multi-Cultural Services	D-102	9336
Withdrawal from College	Records & Registration	A-Wing	9305



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